Aberdeen and Northern Eggs Limited
Nether Glasslaw Free Range Egg Farm

Permit Application

PPC/A/5007385

Contents

1 Non-Technical Summary of Determination

Provide a non-technical summary of the process and determination

Regulation 11 and Schedule 1 of Section 6.9 Part A of the Pollution Prevention and Control (Scotland) Regulations 2012 (The Regulations) requires that installations rearing poultry intensively with more than 40,000 places, may only operate to the extent authorised by a permit.

This application by Aberdeen and Northern Eggs Limited is for a new permit to house a total of 64,000 free range layers in multi-tier housing. 32,000 birds are already reared at the site which has been operating since October 2021. The two new proposed houses (16,000 in each building) will take the operation above the PPC threshold and therefore all sheds will be permitted as a new PPC installation located at Ordnance Survey national grid reference NJ 8604 5939. The area is a Nitrate Vulnerable Zone (NVZ) and a Drinking Water Protected Area (DWPA).

The sheds are designed to minimise ammonia emissions; they are insulated to retain heat; concrete floored with a damp proof membrane; and with walls and roofs insulated to reduce the risk of condensation. Temperature and humidity are monitored continuously and adjusted to achieve optimal conditions for flock welfare and to maintain low moisture content in the litter. Litter will be monitored to ensure that it is friable and loose.

Ventilation will be by means of high velocity roof mounted fans, each with a short chimney and roof mounted Fumus inlet fans which aid air mixing. All air movement is computer controlled to maximise bird welfare and fan operation is minimised to generate good air quality conditions and minimise draughts.

A 200Kw capacity wood chip boiler will provide heat to the sheds to dry manure on belts.

The primary electricity source will be from roof mounted Photo Voltaic Cells and augmented by a supply from the national grid.
No feed mixing or milling is done at the site and feed specification is prepared by a nutrition specialist and supplied by accredited mills so that only approved ingredients are used. This ensures that protein levels are tailored throughout the flock cycle to comply with flock needs and environmental standards. Feed silo's will be protected from vehicle collision.

The principal source of water is from the farm's private well located to the NE of the site with water from mains (Scottish Water) available as a back-up. The well is used to water the flock and for wash down on depletion. Water consumption is monitored and delivered to the birds by low leak nipple drinkers with cups. These reduce wastage of water and maintain dry litter.

Hens will be introduced at 16 weeks of age. Birds are housed on a littered floor of wood shavings which are topped up throughout the cycle if required. Pop holes will be open for a minimum of 8 hours per day. Hens will be housed for approximately 55 – 65 weeks before the flock is depleted.

The multi-tier aviary housing system is fitted with manure belts that remove manure from the houses by conveyor at least once a week to a purpose built, covered manure store prior to removal from the installation. Warm air supplied by the biomass boiler will be blown onto the manure belts to dry the manure.

At the end of the cycle, birds are removed and all litter and manure is completely removed from the house and taken to the litter/manure store where it is stored prior to being applied to land out with the permit boundary as organic fertiliser. The houses are then completely washed out and disinfected. All wash water is collected in an underground sealed tank before also being applied to land out with the installation boundary.

The installation of a Sustainable Drainage System to treat lightly contaminated surface and yard runoff via two swales adhere to the guidelines in the CREW SuDS Guide, considered BAT for IA permitted installations.

Mortalities will be removed from housing daily and transferred to a secure freezer. They will be removed from the site by a licenced contractor.

Collectively, these measures are intended to reduce the production and release of ammonia, odours and dust from the sheds, to prevent liquid washings escaping to the environment and to manage the waste produced on-site. The installation will be operated in accordance with Best Available Techniques and an Environmental Management System (EMS) to minimise the impact of the permitted activities on emissions to air, water, and land.

SEPA has assessed as satisfactory the site report submitted with the application. The report evaluates past potential contamination and future pollution risks to both soil and groundwater.

There are duties placed on SEPA for the protection of designated sites under The Conservation (Natural Habitats, &c.) Regulations 1994 and the Nature Conservation (Scotland) Act 2004. Nether Glasslaw lies within 10 kilometres of several designated sites (please see Section 4.5 of this Decision Document). SEPA has assessed the impact of ammonia emissions and nitrogen and acid deposition on the designated sites as acceptable (see Section 5.2 and 6 of this Decision Document).

The application submitted complies with both the requirements of PPC and the Standard Farming Installation Rules (SFIR).

Determination was therefore to issue the Permit PPC/A/5007385 based on the application submitted.

Glossary of Terms

APIS UK Air Pollution Information System
BAT Best Available Technique
BREF Best Available Techniques Reference Document
BATC Best Available Technique Conclusions
CO Coordinating Officer
CREW Rural Sustainable Drainage Systems: A practical design and build guide for Scotland's farmers and landowners
ELV Emission Limit Value
SAC Special Area of Conservation
SCAIL Simple Calculation of Atmospheric Impact Limits
SPA Special Protection Area
SSSI Sites of Special Scientific Interest
SUDS Sustainable drainage systems

2 External Consultation and SEPA's response

Is Public Consultation Required? (if no delete rows below)	**Yes**

Advertisement Check:	**Date**	**Compliance with advertising requirements**
Edinburgh Gazette	**26/03/2024**	**Yes**
Fraserburgh Herald	**26/03/2024**	**Yes**

Officer Checking advert: CO

No of responses received	None

Summary of responses and how they were taken into account during the determination:

N/A	
Summary of responses withheld from the public register on request and how they were taken into account during the determination:	
N/A	
Is PPC Statutory Consultation Required?	**Yes**
Food Standards Agency:	No Response
Health Board:	No Response
Aberdeenshire Council	Aberdeenshire Council: Two developments with full planning permissions are contained within the site boundary of the application for the Pollution Prevention and Control Permit. 6 high velocity (HV) fans/chimneys shown at the southern end of each poultry shed do not appear to be indicated in the approved plans. The developer may seek advice on the HV fans/chimneys from the Planning Service as to whether a planning permission or approval of non-material variation would be required. SEPA responded: Lack of ventilation detail is an omission since ventilation will always be required for any intensive poultry housing. SEPA have been made aware that Aberdeenshire Council are now requiring SUDS to be calculated based on a 1 in 300 year event i.e. 66mm rainfall and are referencing Ciria design criteria rather than CREW guidelines which are required by SEPA for rural developments. Please confirm what SUDS detail was permitted in the existing consents and confirm specifically whether Aberdeenshire Council are happy with the SUDS calculations that the applicant has submitted in the consultation, or whether you now require the SUDS calculations and designs for Nether Glasslaw PPC application to be resubmitted, to account for climate change mitigation and increased rainfall events. Response from Aberdeenshire Council: Regarding SUDS calculations and provision in the existing consents, these were addressed in the approval reports as follows: APP/2022/2371 'The development would be serviced by an existing private water supply and soakaway for surface water'. (No SUDS detail were listed in the consent) APP/2019/2463 ...'Separate SUDS infrastructure is to be installed for purposes of runoff water.' The application sites were not considered to be at risk of flooding at the time of decision and any SUDS provisions included in the plans were deemed acceptable by the reviewing planner. We would not have the ability to, nor require, retrospective compliance of approved permissions with any changes to SUDS requirements.
Scottish Water	The site boundary falls within a drinking water catchment where a Scottish Water abstraction is located. River Ugie supplies Forehill

	Water Treatment Works (WTW) and it is essential that water quality and water quantity in the area are protected. Scottish Water have produced a list of precautions for a range of activities. This details protection measures to be taken within a DWPA, the wider drinking water catchment and if there are assets in the area. Please note that site specific risks and mitigation measures will require to be assessed and implemented. A review of our records indicates that there are no Scottish Water assets (including water supply and sewer pipes, water and waste water treatment works, reservoirs, etc.) in the area. This should be confirmed however through obtaining plans from our Asset Plan Providers, listed in the SW list of precautions for assets. The applicant confirmed that the installation will be operated in accordance with the protection measures to protect drinking water assets provided in Annex 1
NatureScot	The latest proposed mitigation measures have resulted in modelling that is below the 4% process contribution threshold for likely significant effects/damage to designated sites. We therefore have no comments to make in this case(see section 6).

Discretionary Consultation required?	**No**
Enhanced SEPA Consultation required?	**No**
"Off site" consultation required	**No**
Transboundary Consultation required?	**No**
Is Public Participation Consultation Required?	**Yes**

STATEMENT ON THE PUBLIC PARTICIPATION PROCESS
The Pollution Prevention and Control (Public participation)(Scotland) Regulations 2005 requires that SEPA's draft determination of this application be placed on SEPA's website and public register and be subject to 28 days' public consultation. The dates between which this consultation took place, the number of representations received and SEPA's response to these are outlined below.

Date SEPA notified applicant of draft determination	
Date draft determination placed on SEPA's Website	11/12/2024
Details of any other 'appropriate means' used to advertise the draft. Seek advice from the communication department	
Date public consultation on draft permit opened	11/12/2024
Date public consultation on draft permit consultation closed	
Number of representations received to the consultation	
Date final determination placed on the SEPA's Website	

Summary of responses and how they were taken into account during the determination:

Summary of responses withheld from the public register on request and how they were taken into account during the determination: **REMOVE THIS BOX FROM ANY VERSION OF THIS DOCUMENT TO BE PLACED ON THE WEBSITE OR PUBLIC REGISTER. RETAIN IN THE VERSION FOR THE WORKING FILE.**	
Officer:	

3 Administrative determinations
Determination of the Schedule 1 Activity
As detailed in the application and its amendments
Determination of the Stationary Technical Unit to be permitted
As detailed in the application and its amendments
Determination of Directly Associated Activities
As detailed in the application and its amendments
Determination of Site Boundary
As detailed in the application and its amendments
Officer: CO

4 Introduction and Background

4.1 Historical Background to the activity

Aberdeen & Northern Eggs Limited trading as Farmlay Eggs are looking to expand their business in the northeast of Scotland. They already have 32,000 free range layers on the Nether Glasslaw site, near New Pitsligo, Aberdeenshire and are proposing the erection of 2 additional 70x20m sheds to take the total number of places for laying hens to 64,000 and therefore require a PPC permit to operate. Previous land use is general agricultural. Aberdeen & Northern Eggs Limited operate two existing intensive poultry installations and are familiar with the principles of environmental protection and the requirements of PPC.

The applicant was required to demonstrate that the poultry housing units were designed having regard to the following principles outlined in the BREF and the BAT Conclusions:
• reducing the ammonia-emitting surface;
• removing the manure frequently to an external store (e.g., with belt removal systems);
• quickly drying the manure;
• using surfaces which are smooth and easy to clean;
• lowering the indoor temperature and ventilation as much as animal welfare and/or production allow.

The proposals for the new housing demonstrate that the chosen design addresses the above principles.

4.2 Description of activity

Rearing poultry intensively in an installation with more than 40,000 places is described in Part A of Section 6.9 (b) of Schedule 1 of the Regulations. Nether Glasslaw Farm proposes to have 64,000 places for free range laying hens in a multi-tier aviary housing system.

Other Directly Associated Activities include:
• Feed delivery and storage
• Generator & Fuel storage
• Water storage
• Chemical storage

• Manure handling and storage
• Dirty water storage
• Storage and disposal of fallen stock
• Management of lightly contaminated surface water
• Ancillary power generation by a biomass boiler and one diesel generator

4.3 Outline details of the Variation applied for

N/A

4.4 Guidance/directions issued to SEPA by the Scottish Ministers under Reg.60 or 61.

None.

4.5 Identification of important and sensitive receptors

AMMONIA

SEPA must assess the amount of ammonia and nitrogen that will be deposited on designated features within 10km of the installation.

Turclossie Moss SAC is within 10km of the proposed site. The Qualifying feature is mixed raised and blanket bog assessed in 2010 and 2016 as unfavourable bad.

Troup, Pennan and Lion's Head SPA is within 5.5km of the proposed site and is designated for breeding birds.

There are 5 SSSIs within 10 km of the proposed site:

1. Tore of Troup SSSI – Upland mixed ash woodland, Upland birch woodland and Upland assemblage 0.9km to the west.
2. Geordie Craigs SSSI – geological and ornithological 7.5km to the west-north-west.
3. Gamrie and Pennan Coast SSSI – geological and ornithological 5.5km to the north.
4. Rosehearty to Fraserburgh Coast SSSI – geological and ornithological 9.3km to the north-east.
5. Turclossie Moss SSSI – mixed raised and blanket bog 2.5km to the east-south-east.

Refer to Sections 5.2 and 6 for an assessment of the impact of the proposal on the identified designated sites.

PM_{10}

Where sensitive receptors are located within 250 metres of a poultry unit, SEPA requires the Applicant to screen emissions of particulate matter to establish whether the emission will cause any air quality objectives to be breached.

Nether Glasslaw Farm Cottage is approximately 130 m to the north-north-east of the site. All other properties are outwith 250m.

Refer to Section 5.2 for an assessment of the impact of the proposal on human health receptors.

Officer:	CO

5 Key Environmental Issues

5.1 Summary of significant environmental impacts

SEPA have identified a number of key environmental impacts and how they must be addressed.

- Ammonia emissions

- Manure, litter and wash water storage
- Surface water drainage
- Protection of soil and groundwater
- Odour
- Noise
- Chemical use
- Fuel containment
- Energy efficiency
- Waste minimisation, storage and disposal
- Resource utilisation
- Environmental management systems

5.2 Emissions to Air

Point Source emission to air

AMMONIA (BAT 23 & 31)

Ammonia from houses and manure/soiled litter storage, can be carried on air and deposited onto sensitive wetland and terrestrial habitats.

In order to quantify the amount of ammonia which will be emitted, SEPA use DEFRA-approved emission factors. The emission factors are specific to each proposed housing system. Some housing systems are more efficient than others and will result in a lower emission factor. Certain mitigation measures will result in the reduction of a standard emission factor. The proposed housing at Nether Glasslaw meets the descriptor in BAT Conclusion 31 (b4) "manure belts (in case of aviary)" being a multi-tier aviary system with manure belts fitted below the perching area. There is an area of littered floor and pop holes providing daytime access to an outside ranging area.

The proposal is to erect two new poultry houses. There are already two existing free range multi-tier houses which were brought into operation in October 2021. At the time of application, the midpoint for the 3 year background maps from APIS is December 2021, so all 4 sheds have been modelled as new emissions, since operations at Nether Glasslaw will not be included in the background data.

The temperature within the houses will be regulated by automatically controlled high velocity roof mounted fans, each with a short chimney and roof mounted Fumus inlet fans which aid air mixing. Manure is collected on a belt below the multi-tiers where it will be dried by forced heat and removed by conveyor at least once a week to a purpose built, covered manure store prior to removal from the installation.

Under the Habitats Regulations (Conservation (Natural Habitats, &c.) Regulations 1994) and the Nature Conservation (Scotland) Act 2004 there are duties placed on SEPA for the protection of designated sites. SEPA must assess the amount of ammonia and nitrogen that will be deposited on designated features within 10km of the installation (See section 4.5).

SEPA uses the Simple Calculation of Atmospheric Impact Limits (SCAIL) model to access the impact of ammonia emissions and nitrogen and acid deposition on designated sites.

The relevant critical loads and critical levels were obtained from the Site Relevant Critical Load section of the APIS database (www.apis.ac.uk).

During screening, the critical level and the lowest of the European range for critical load of the most sensitive designated feature for each site are used in the assessment.

The background plus process contribution, i.e. the total amount of pollutant expected to be experienced by the receptor, is called the Predicted Environmental Contribution (PEC). Where the PEC is less than the benchmark (i.e. < 100% of the critical load or level), or where the process

contribution is less than 4% of the benchmark then it is considered unlikely that there will be a significant effect on the designated site as a consequence of the proposed regulated activity.

Since Geordie Craigs SSSI, Gamrie and Pennan Coast SSSI and Rosehearty to Fraserburgh Coast SSSI are designated for geological and ornithological designations, they are screened out. Troup, Pennan and Lion's Head SPA is designated for breeding birds and can also be screened out based on its qualifying interests.

Therefore, only Turclossie Moss SAC and SSSI and Tore of Troup SSSI are included in this assessment.

The applicant used the SCAIL screening tool to perform screening and the results were forwarded to SEPA.

Receptors	Distance	PEC NH3 as %EAL	PC NH3 as %EAL	PEC N Dep as %EAL	PC N Dep as %EAL	PEC Acid Dep %EAL	PC Acid Dep %EAL
Tore of Troup (SSSI)		128%	6%	441%	9%	331%	6%
Turclossie Moss (SSSI) (SAC)		127%	5%	276%	5%	205%	3%

Based on the screening results, it is SEPA's view that a significant effect/potential damage to the designated sites as a consequence of ammonia emissions and nitrogen deposition arising from the proposed activity could not be ruled out. The applicant was therefore required to undertake detailed dispersion modelling to inform an Appropriate Assessment.

AS Modelling & Data produced a report on the modelling of the dispersion and deposition of ammonia and nitrogen from the proposal dated 25th June 2022. Version 3 was accepted by SEPA on 29 June 2023.

The emission factor for egg laying chickens in a multi-tier system with manure belts is 0.08 kg-NH_3/bird place/y; the ranging factor is 0.22 kg-NH_3/bird place/y.

Published figures for ranging time suggest that birds defecate 80% inside the house and 20% on the range[1]. The AS Modelling Data report asserted that an 80/20 split on time spent in the house and on the range (and proportion of droppings) and of 100% range use, is not realistic, supported by several references.

SEPA maintained that modelling 100% range availability with an 80/20 split would make a material difference to the results at the nearest receptors given the close proximity, accepting this to be a worst case scenario.

AS Modelling Data presented this as an 'unsound scenario'. They also modelled what they called the 'realistic scenario' of 20% range use and 33% range availability, giving overall range usage of 6.666%.

The results from the dispersion modelling of the unsound scenario are presented in the table below.

[1] SEPA assume the 20% figure based on DEFRA's recommendation in the Inventory of Ammonia Emissions from UK Agriculture. Technical Note TN650 written by SRUC in April 2013 also assumes 80% of droppings are in the house (Table B) and Scottish Government guidance on Nitrate Vulnerable Zones for farmers (Book 4 table 5) still currently uses this value

Receptor number	X(m)	Y(m)	Designation	Maximum annual ammonia concentration		Maximum annual nitrogen deposition rate	
				Process Contribution (µg/m³)	%age of Critical Level	Process Contribution (kg/ha)	%age of Critical Load
6	385056	859102	Tore of Troup SSSI	0.038	**3.79**	0.197	**3.93**
7	385042	858806	Tore of Troup SSSI	0.021	**2.13**	0.110	**2.21**
8	384985	859539	Tore of Troup SSSI	0.048	**4.82**	0.250	**5.00**
9	385408	860442	Tore of Troup SSSI	0.068	**6.85**	0.356	**7.12**
10	385662	860689	Tore of Troup SSSI	0.064	**6.39**	0.332	**6.64**
11	384802	860244	Tore of Troup SSSI	0.034	**3.42**	0.178	**3.55**
12	384625	859857	Tore of Troup SSSI	0.028	**2.78**	0.144	**2.88**
13	384541	858432	Tore of Troup SSSI	0.008	0.78	0.040	0.81
14	383991	859051	Tore of Troup SSSI	0.008	0.78	0.040	0.81
15	384118	860177	Tore of Troup SSSI	0.015	**1.51**	0.079	**1.57**
16	385070	861161	Tore of Troup SSSI	0.027	**2.70**	0.140	**2.80**
17	382737	859368	Tore of Troup SSSI	0.005	0.50	0.026	0.52
18	383483	860796	Tore of Troup SSSI	0.011	**1.07**	0.056	**1.11**
19	384594	861780	Tore of Troup SSSI	0.016	**1.56**	0.081	**1.62**
20	382436	860669	Tore of Troup SSSI	0.005	0.50	0.026	0.52
21	383293	861494	Tore of Troup SSSI	0.010	0.97	0.075	**1.50**
22	382087	861510	Tore of Troup SSSI	0.005	0.47	0.037	0.74
23	384102	862335	Tore of Troup SSSI	0.012	**1.18**	0.062	**1.23**
24	382515	862843	Tore of Troup SSSI	0.005	0.53	0.041	0.82
27	387981	857364	Turclossie Moss SAC/SSSI	0.018	**1.83**	0.095	**1.90**
28	388276	858056	Turclossie Moss SAC/SSSI	0.014	**1.43**	0.074	**1.49**
29	388906	857466	Turclossie Moss SAC/SSSI	0.009	0.93	0.048	0.96
30	388666	856918	Turclossie Moss SAC/SSSI	0.012	**1.21**	0.063	**1.26**

The results from the dispersion modelling of the realistic scenario are presented in the table below.

Receptor number	X(m)	Y(m)	Designation	Maximum annual ammonia concentration		Maximum annual nitrogen deposition rate	
				Process Contribution (µg/m³)	%age of Critical Level	Process Contribution (kg/ha)	%age of Critical Load
6	385056	859102	Tore of Troup SSSI	0.022	**2.25**	0.117	**2.33**
7	385042	858806	Tore of Troup SSSI	0.014	**1.35**	0.070	**1.41**
8	384985	859539	Tore of Troup SSSI	0.041	**4.09**	0.213	**4.25**
9	385408	860442	Tore of Troup SSSI	0.056	**5.63**	0.292	**5.85**
10	385662	860689	Tore of Troup SSSI	0.055	**5.53**	0.287	**5.75**
11	384802	860244	Tore of Troup SSSI	0.029	**2.95**	0.153	**3.06**
12	384625	859857	Tore of Troup SSSI	0.023	**2.29**	0.119	**2.38**
13	384541	858432	Tore of Troup SSSI	0.006	0.64	0.033	0.66
14	383991	859051	Tore of Troup SSSI	0.006	0.59	0.031	0.62
15	384118	860177	Tore of Troup SSSI	0.013	**1.32**	0.069	**1.38**
16	385070	861161	Tore of Troup SSSI	0.023	**2.33**	0.121	**2.42**
17	382737	859368	Tore of Troup SSSI	0.004	0.43	0.022	0.44
18	383483	860796	Tore of Troup SSSI	0.009	0.94	0.049	0.97
19	384594	861780	Tore of Troup SSSI	0.014	**1.37**	0.071	**1.42**
20	382436	860669	Tore of Troup SSSI	0.005	0.48	0.025	0.50
21	383293	861494	Tore of Troup SSSI	0.009	0.86	0.067	**1.33**
22	382087	861510	Tore of Troup SSSI	0.004	0.45	0.035	0.70
23	384102	862335	Tore of Troup SSSI	0.011	**1.05**	0.055	**1.09**
24	382515	862843	Tore of Troup SSSI	0.005	0.50	0.039	0.78
27	387981	857364	Turclossie Moss SAC/SSSI	0.016	**1.58**	0.082	**1.64**
28	388276	858056	Turclossie Moss SAC/SSSI	0.012	**1.16**	0.060	**1.20**
29	388906	857466	Turclossie Moss SAC/SSSI	0.008	0.80	0.042	0.84
30	388666	856918	Turclossie Moss SAC/SSSI	0.011	**1.07**	0.055	**1.11**

Values in red are predicted ammonia concentrations and nitrogen deposition rates above what is incorrectly identified as SEPA's threshold percentage for a statutory site (4% of relevant Critical Level/Load). 4% is the threshold for SCAIL Screening, not detailed modelling. In Scotland there is no relevant threshold and results are assessed on a site by site basis.

The report did not make any further recommendations.

The AS Modelling & Data report stated that '*There have been no changes or new emissions consented at PPC installations within 10km of Turclossie Moss and Tore of Troup that are not included in the background values, therefore in-combination assessment is not relevant.*'

SEPA and NatureScot carried out an Appropriate Assessment of the impact on the specific habitats and their species and confirmed that the proposal would not adversely affect the designated sites (see section 6 below).

PM_{10} (BAT 11)

Dust from poultry houses mainly originates from feathers, skin particles and used litter and to a lesser extent from feed and bedding.

PM_{10} dust particles (particulate matter 10 micrometres of less in diameter) are subject to statutory air quality standards. In Scotland, air quality objectives are set out in the Air Quality (Scotland) Regulations 2000 (as amended).

Where sensitive receptors are located within 250 metres of a poultry unit, SEPA requires the applicant to screen emissions of particulate matter to establish whether the emission will cause any air quality objectives to be breached.

AS Modelling & Data also produced a report on modelling to assess the impact of airborne particulate matter from the proposal dated 4 April 2022. Modelling was carried out using DEFRA-approved emission factors.

Nether Glasslaw Farm Cottage (Receptor number 1) is approximately 130 m to the north-north-east of the site. All other properties are out with 250m.

Relevant Objective levels in Scotland are the Annual Mean (18ug) and the 98th percentile/24 hour daily mean (50 µg m^{-3}, not to be exceeded more than 7 times a year . 18 µg m^{-3}). Screening is passed where PM_{10} process contributions are less than 10% of the relevant objective.

Annual average PM_{10} concentration of 18 µg/m^3

NAME	Process Contribution	EAL	% PC/EAL
Nether Glasslaw Farm Cottage	0.301	18	1.67%

Daily average PM_{10} concentration of 50 µg/m^3 not to be exceeded more than seven times per year Equivalent to 98.1 percentile

NAME	Process Contribution	EAL	% PC/EAL
Nether Glasslaw Farm Cottage	2.360	50	4.72%

There is no predicted exceedance of the air quality objectives. As such the predicted risk to human health is seen as acceptable and no further assessment is required.

Diesel Generator

It is a requirement of the animal welfare regulations that the birds have adequate heating and ventilation at all times. Document NGF 7 submitted with the application, states that the primary power source will be solar panels supplemented by mains grid electricity. However, in the event of a power failure, a back-up diesel generator will be used. SEPA are aware that diesel generators can give rise to dense fume, especially at start up, or if the generator is poorly maintained. SEPA expect the operator to use BAT particularly with regard to servicing and maintenance to minimise visible emissions and particulates from the exhaust. The generator will be tested for a short period once per week.

Biomass Boiler

A Heizomat RHK-AK200Kw wood chip fired boiler will transfer heat via a closed water system to warm incoming air in a heat exchanger located in the roof space of each house. The warm air is then ducted onto manure on the belts in all four houses to aid drying. Wood chip will be sourced from a local sustainable source. The permit does not contain any emission limits for the operation of the boiler due to its size, but SEPA expect the operator to use BAT particularly with regard to servicing and maintenance so that all releases during normal operations will be free from visible emissions.

There will also be a log store a chipping unit and an enclosed wood chip storage area. This is not anticipated to cause any dust issues off site.

Fugitive emissions to air (BAT 1 & 11)

Potential fugitive emissions to air include the release of dust and ammonia during cleaning or fallen stock removal, and from the birds themselves. SEPA accepts that some fugitive releases are unavoidable, for example, unplanned releases due to an unforeseen incident; others such as poor cleaning practices can be controlled through the relevant management techniques. SEPA views fugitive releases to air from these activities as an indication of process or maintenance issues and would require any defects to be reported and rectified as soon as possible.

Manure and litter will be stored in a covered store to minimise emissions of odour and ammonia.

Feed silos will be fitted with cyclone particle containment and mitigation to contain dust emissions as per the requirement in BAT 11.

Although not specifically covered by conditions within the permit, maintenance issues are covered by the PPC Regulations under Regulation 22 which requires the use of BAT. SEPA seeks to reduce these occurrences by requiring operators to record maintenance issues and demonstrate a high degree of environmental management over the activities they undertake.

SEPA does not have any specific policies in relation to bioaerosols from IA processes. There are currently no health criteria values available for interpreting the results of bioaerosol monitoring. Routine monitoring would be required at receptors within 250 metres should appropriate criteria for assessment be identified.

Odour (BAT 1, 12 & 13)

Primary odour issues from intensive poultry rearing are ammonia from housing and manure management with potential for additional odours from the use of chemicals and disinfectants. The permit holder must utilise BAT to prevent or where that is not possible minimise odour from the installation.

BAT is set out in the Odour Management Plan (OMP) for Nether Glasslaw which has been submitted as part of the application. The OMP considers all activities on site with the potential to cause complaints of odour and ways to control it.

5.3 Emissions to Water

Point Source Emissions to Surface Water and Sewer

Site Drainage

Lightly Contaminated Drainage

The proposal is for all 4 houses and respective yards and scratch areas to be served by two swale systems to treat lightly contaminated runoff.

The swale capacity has been calculated in line with CREW guidance but the design differs from the guidance in that the swales are divided into two with the first unit receiving drainage from concrete yards and scratch areas via solid pipes, retaining the “first flush” for greater retention and treatment, the second chamber, receiving clean roof water and run off from the first chamber during storm events, which will allow treatment. The second chamber also has an outlet pipe to a tributary of the Glasslaw Burn for flood attenuation.

The depth of the swales is also less than that advised in CREW because whilst the swales will be fenced off, they are located on the ranging area and the applicant wishes the swales to be dry most of the time to avoid attracting wild birds to standing water therefore minimising the risk of Avian Influenza.

SEPA are aware that local planning authorities in the northeast of Scotland have recently been requiring a greater rainfall allowance in the design of SUDS up to 66mm for a 1 in 300-year event.

Aberdeenshire Council have made no objection to this PPC application which is based on 15mm rainfall.

It should be noted that in the event of any incidents, spillages might find their way into the swales. This would be considered an unauthorised emission. SEPA expect appropriate management procedures to be in place to prevent spillages reaching surface water drainage features.

The application initially indicated that the section of road where wheels/arches are sprayed with disinfectant will be directed to soakaway. This is not acceptable. Any areas of knap sack spraying must be no less than 10m away from any drainage features (see point source emissions to groundwater). The applicant was asked to correct this detail.

Foul Drainage

There are no public sewers within the vicinity of Nether Glasslaw and therefore there will be no discharges to the sewer. A septic tank will be installed to collect all domestic wastewater from the welfare amenities and discharge to a full soakaway north of the poultry sheds. This is to be authorised under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). The foul effluent system is not considered part of the permitted installation.

Point Source Emissions to Groundwater

There shall be no direct point source emissions to groundwater. The applicant has demonstrated that the swales are designed in line with SEPA advice and are sufficiently sized. If maintained properly, they will provide sufficient treatment of lightly contaminated run off and therefore this is not considered to be a point source discharge to groundwater.

Wash water generated through house washing at the end of each cycle (every 60-65 weeks) will be collected in two sealed below ground tanks (each $20m^3$). The pressure washer capacity is approx. 5 l/min resulting in $22m^3$ / wash water generation over 4 days. The sealed tank serving each house is only $20m^3$ therefore the tanks need to be emptied once during the wash-down period to provide sufficient capacity.

Emptying of the wash water tank will be by vacuum tanker in which it is removed from site and spread on land out with the permitted installation.

The site plan shows clean water draining from the concrete areas to the secondary swales, this will be the case for most of the time but the area has potential to become contaminated when the sheds are cleared at the end of the cycle and procedures must be in place to prevent contamination entering the swale.

Wheel Spraying

The application proposes 'wheel spraying' to improve biosecurity on site. This is accepted as low risk as there is very little residual run off in contrast to 'wheel washing' which involves the use of a pressure wash system with significant volumes of effluent which must be fully contained using settlement tanks and oil separators and collected for off-site removal as a liquid waste in line within PPG13.

However, the application states that drainage from yard areas where wheel spraying will take place, which could contain traces of biocides will be drained to swales.

Whilst this is only a knap sack spryer with very low residual run off, SEPAs view is that it cannot be adequately demonstrated that a swale will provide adequate treatment for any residue from wheel spraying. We consider the proposal to discharge into a swale to be a risk to the water environment, including groundwater, due to the potential for biocides to discharge to ground and hence to enter the water environment.

As Scotland's environmental regulator, we are required to consider the protection of groundwater, especially in areas of high environmental sensitivity. Scottish Water have expressed concern in their consultation response seeking strict controls for prevention of spills/pollution events to protect the drinking water catchment.

It is important to note that CREW at no point advocates the use of a swale for treatment of anything other than lightly contaminated runoff. Best Available Techniques (BAT) for a new PPC Part A installation should prevent discharges to the water environment, including groundwater.

SEPA will not authorise any discharge from the disinfection area to the water environment. Therefore, the drainage from the area must not be directed to the main site swales as shown on the drainage layout and described in the proposal. The spray bay must be no more than 10m from any drainage feature and must not be 'directed' so that any flow would be to adjacent grassland only. The applicant was asked to amend the application and confirm that these minimum distances will be met.

Fugitive Emissions to Water (BAT 1 & 6)

There are several potential sources which could lead to fugitive emissions to water. These include, poorly maintained surfaces and drainage systems, bird delivery and collection, and lack of care during cleaning of the housing units, all of which can lead to contamination of surface waters.

SEPA views fugitive releases as avoidable and can usually link these incidents to either operational error or negligence. SEPA seeks to reduce these occurrences by requiring the permit holder to implement BAT and to provide training to relevant staff in environmental issues, exercising a high degree of environmental management, and continual maintenance of the activities they undertake.

Emissions to Land (BAT 7 & 20)
In the case of free-ranging hens, SGRPID considers that deposition on a range will be constant across the whole area. In order to ensure that an installation is BAT and that an Operator is taking all appropriate preventative measures against pollution in a NVZ, the Applicant is required to demonstrate that deposition on the ranging area is in accordance with the limit advised by SGRPID as 170 kg N/Ha under the Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008. The entire ranging area will be included in the installation boundary. For 64,000 birds to meet the limit of 170 kg N/Ha the range area will need to be no less than 40 hectares. The range area for this proposal totals 46 hectares.

Manure is collected on a belt below the multi-tiers where it will be dried by forced heat and removed by conveyor at least once a week to a purpose built, covered manure store prior to removal from the installation. Spent litter is removed at the end of each cycle to the covered manure store. Litter and manure are taken off site to be spread to land as organic fertiliser out with the installation boundary except during the closed NVZ period. Manure will be spread in line with each farms nutrient management plan, off-setting the application of conventional application of NPK fertiliser. Washwater is also collected in below ground tanks and spread on land out with the installation boundary as organic fertiliser.

The spreading to land of manure and washwater out with the installation boundary is covered by the Water Environment (Controlled Activities) (Scotland) Regulations 2011, General Binding Rule 18 (GBR 18).

5.4 Noise (BAT 9 & 10)

Noise at the permitted installation is covered by Section 2.9 of the SFIR which is considered by SEPA to meet BAT Conclusions 9 & 10 which the operator is required to have regard to when operating an intensive agriculture site under the PPC Regulations.

The Permit and SFIR recognise that noise can give rise to complaints. The operator is required to undertake noise assessments and produce a Noise Management Plan (BAT 1) to prevent or minimise

the impact on the local environment. A Noise Management Plan has been submitted with the application.

The predominant source of noise from poultry housing units is generated from the ventilation systems. Other sources of noise related to this type of activity can include vehicle movements in and around the site and the placement and removal of the birds. The latter two are considered unlikely to cause issues as these activities will take place for such short durations as well as being infrequent. Routine maintenance of fans will also prevent noise and the Noise Management Plan will address any issues that should arise and will be updated as stipulated in the permit.

5.5 Resource Utilisation

Water use (BAT 5)

The principal source of water is from the farm's private well located to the NE of the site with water from mains (Scottish Water) available as a back-up.

Groundwater abstractions are authorised under the Water Environment (controlled Activities) (Scotland) Regulations 2011 (CAR) and the operator will need to ensure that the relevant authorisation is in place prior to the operation of the proposed new units.

Water use within the food production sector is primarily an animal welfare issue as the operator of the installation is required under other legislation to provide an adequate supply of clean water for both the welfare of the birds and to undertake adequate cleaning of vehicles.

It is up to the operator to demonstrate the use of BAT to minimise water usage, but SEPA does directly regulate water use through permit conditions requiring the operator to minimise water consumption and explore options for minimisation, and to report consumption in the resource efficiency report.

The greatest volume of water consumed is drinking water for the birds. Water will be delivered to poultry via nipple line drinkers with drip collection cups to prevent spillages (as outlined in the SFIR and BAT standards) thereby reducing wastage and ensuring dry litter.

Water is also used for cleaning the poultry units at the end of the cycle. The housing units are washed down and disinfected before the introduction of the next flock.

Energy use and generation (BAT 8)

A computer-controlled system maintains the temperature within the housing units. This is directly linked to the ventilation system to prevent over-heating and lack of free ventilation. SEPA recognises that energy usage is dependent on several factors out with the control of the operator who has to maintain the welfare of the birds in extremes of weather.

A permit condition requiring the formal systematic assessment of energy consumption on site will require the operator to identify where efficiencies can be made.

The primary source of electricity will be from solar panels, with additional power supplied by the grid as required. A standby diesel generator will supply back-up power in the event of a mains outage. Heat will be supplied by a biomass boiler.

The site will not be covered by a Climate Change Agreement.

Raw Materials Selection and Use

All applicants applying for PPC Part A permits are required to examine their raw materials usage and seek ways to reduce their impact on the environment. The standard permit condition requiring the formal assessment of resource utilisation on site will require the operator to identify where any efficiencies can be made and demonstrate continuing improvement.

Chemicals:
Chemicals used in poultry rearing include cleaning and disinfection chemicals, pesticides, rodenticides, herbicides, insecticides and fungicides. All of these chemicals are required to be DEFRA-approved. Once onsite chemicals will be contained in the chemical storage area located in the central services building. Procedures are in place to absorb any spillage and ensure appropriate disposal.

Veterinary Medicines:
Veterinary medicines are stored in secure storage within the central services building. Procedures are in place to absorb any spillage and ensure appropriate disposal.

Fuel Oil:
Agricultural fuel oil is stored within the bunded generator itself and there is no separate storage on site. The generator has a 394-litre internal bund. It is sited on a concrete plinth away from vehicle collision risk. The fuel storage is compliant with The Water Environment (Miscellaneous) (Scotland) Regulations 2017. A filling protocol will be in place and emergency absorbent material will be available in the event of an accidental spill.

Feed (BAT 3 & 4):
Feed will be supplied to the site, pre-mixed, into fully enclosed silos each fitted with cyclone particle containment and mitigation and protected from vehicle collision. Feed will then be transported into the feed chain systems within the units by augers. Any feed spillages will be cleared up immediately to prevent any potential contamination of ground water or watercourses and to deter pests. Rations are formulated by poultry nutritionists. Feed specifications are created to minimise the amount of nitrogen and phosphorous excreted by the birds over the flock cycle by optimising crude protein output and feed utilisation. SEPA is satisfied that this meets the requirements of SFIR and BAT.

Litter:
Wood shavings will be used as bedding litter at the beginning of each flock cycle and topped up as required. Litter is brought onsite as required and no additional litter is stored onsite.

Woodchips:
Wood chip used as fuel for the biomass boiler will be sourced from a local sustainable source. The wood chip unit will need to be included in the noise management plan and the chipping and storage of wood chips prior to use as fuel must be carried out in line with permit condition 6.1.3 *'Noise from the authorised activities, which has a significant impact on the environment, people or property, must not be emitted beyond the boundary of the authorised place'* and condition 4.2.1 '*The emission of any other substance, not specified in Table 3 from the installation must not cause environmental harm'*.

5.6 Waste Management and Handling

Waste Minimisation

Standard permit conditions require the operator to minimise waste and where possible develop and implement recycling or recovery strategies. Records are required to be kept on site of all waste streams and the source, quantity and disposal routes taken. This data will be reviewed every 4 years in the resource efficiency report required in the permit.

It is not anticipated that there will be much waste generated by the site. Packaging such as plastic, paper and cardboard will be collected and stored on the concreted waste storage area outside the front of the poultry houses and sent for recycling as appropriate. General farm waste will also be stored in the waste storage area and uplifted by an appropriately licensed contractor.

Waste Handling

Foot baths are located at various locations around the site. The foot baths have lids and will therefore not overtop in wet weather. Spent disinfectant will be disposed of into the underground washwater tank. Where a disinfectant or effluent from cleaning may contain list I or II substances, washwater

must be exported from site and disposed of at a suitably licenced facility. When a disinfectant does not contain list I or II substances, washwater can be spread to land in accordance with GBR 18.

Mortalities will be removed daily to a secure, vermin proof freezer. Final removal will be by registered contractors under the fallen stock scheme. All disposal of carcasses will be undertaken in accordance with the Animal By-Products (Enforcement)(Scotland) Regulations 2013.

It is inevitable that a small number of eggs will end up in the litter and manure within poultry housing and will result in waste eggs being spread to land out with the permitted installation with the litter and manure, but the volume should be minimal and is considered by SEPA to be unavoidable.

Adding waste/broken eggs to the litter or manure after the eggs have been removed from the bird area, for example from grading/sorting facilities and packing stations, changes the status of the litter and manure and it all becomes a waste which will need to be collected and disposed of by an authorised waste contractor.

Waste/broken eggs must be collected, stored and disposed of appropriately. Broken eggs are a CAT 3 waste. If there is no facility on site to handle broken eggs the following procedure should be followed:

- Collect broken eggs in a plastic lined bucket / bin.
- Freeze in the plastic liner (in the fallen stock freezer is ok).
- Arrange for uplift as required by an authorised CAT 3 waste contractor.

The volume of other wastes stored on the site is minimal and all will be considered in the relevant section of the resource efficiency assessment required under the standard permit condition. The onus of Duty of Care shall apply to all waste management at the installation.

Waste Recovery or Disposal

There will be no waste recovery or disposal taking place within the permitted installation. Specialist contractors will remove waste to suitably licenced facilities. The Duty of Care required under section 34(7) of the Environmental Protection Act 1990 (as amended) is a statutory duty which must be complied with by anyone who produces, keeps, imports or manages controlled waste in Scotland.

5.7 Management of the site

Environmental Management System (BAT 1 & 2)

Good site management is a requirement not only of the PPC Regulations & BREF but also the Food Safety Act 1990, regulated by the Food Standards Agency, and the Animal Welfare Act 2006. Agricultural installations are subject to regulatory controls requiring Operators to operate installations to a high standard both to ensure welfare of animals and to protect products entering the food chain.

BAT 1 requires that the permitted activity is operated in accordance with an environmental management system (EMS). The BREF requires that in order to improve the overall environmental performance, the EMS should incorporate the following key features:

- Management commitment
- Environmental policy
- Financial planning and investment
- Relevant procedures (training, record keeping, maintenance, emergency procedures)
- Checking performance (monitoring, preventative action, auditing)
- Review
- Continual improvement
- Benchmarking
- Noise Management Plan

- Odour management Plan

BAT 2 requires good housekeeping to prevent or reduce the environmental impact and improve overall performance. This includes training, routine maintenance and an emergency plan.

The applicant has indicated that the installation will be operated in full compliance with Section 2.1 of SFIRs requiring an appropriate person and deputy, a management system, competent staff, and record keeping.

Accidents and their Consequences (BAT 1)

The PPC Regulations specifically preclude SEPA from adding conditions to a Permit regarding the Health and Safety of Staff or workers on-site; however should an accident or incident occur that is likely to pose a risk to the environment or harm to human health in the wider community then SEPA would require, under the conditions of the permit, that not only must the Operator take action to limit the immediate environmental impact but where necessary implement changes to try to ensure that the event does not happen again.

In general, all accidents or incidents likely to cause pollution and all complaints to the site regarding nuisance emissions are required by Schedule 7 of the Permit to be recorded and dependent on the severity, notified to SEPA. Emergency preparedness and response (incident prevention and mitigation) are required as per BAT 1 as part of the Environmental Management System for the site.

Closure

In order to ensure that the site can be returned to its pre-PPC Permit state, SEPA have required the applicant detail any pre-application problems prior to permitting so that a site surrender report can be compared with the Site Condition and Baseline Reports. Surrender of the permit is by an application to SEPA who have to be satisfied that the requirements of Regulation 19 of the PPC Scotland Regulations 2012 (as amended) are complied with.

As per the PPC Regulations the applicant shall need to remediate the site where required to the levels cited in the baseline report (please see Section 5.8 below for more information).

The operator has agreed to meet Section 2.15 of the SFIR for Decommissioning.

5.8 Site Condition (and Baseline) Report

The application contains a Site Condition Report (SCR) and Baseline Report. The reports identify all substances held on site and information about the Relevant Hazardous Substances (RHS) contained within each as well as details of how they are used, stored and potentially released.

Historical mapping shows no other land use other than arable farming over the past 120 years. As such no site-specific contamination is expected. However, diffuse pollution, especially nutrient enrichment, is possible as a result of agricultural practices. The site sits within a Nitrate Vulnerable Zone (NVZ). The risk of historical release of hydrocarbons to the soil or groundwater is considered negligible and therefore the baseline will be taken to be zero.

No soil or groundwater sampling was undertaken. Representative surface water sampling was carried out in November 2023. The application is confusing in the naming of the water sample points, some are environment monitoring points, and some are permit monitoring points. For the purpose of routine monitoring, they are all relevant.

There is a well located to the east of the main farm building used to water the flock and for wash down on depletion with mains water available as back up and will therefore be included by SEPA in the Installation Boundary. In the absence of groundwater level data, there is uncertainty regarding the local groundwater flow regime. However, based on the OS & geological mapping, it is considered

likely that this well might be hydraulically upgradient of the PPC installation. OS mapping indicates there are a number of other wells and springs in the surrounding area, within 1 km^2 of the site.

Potential pollution linkages have been omitted from the Conceptual Site Model (CSM). The swale is unlined and is designed to allow slow filtration of contaminated water into the subsurface, which presents a potential risk to groundwater. Whilst the risk to groundwater is acceptable under normal conditions, the potential preferential pathway associated with the swale should be taken into consideration were there to be a pollution incident at the site. The applicant was asked to update the SCR with this detail.

Having considered the initial round of surface water sampling results, SEPA required the applicant to take additional upstream and downstream samples of the Glasslaw Burn (below the confluence of the drain and the Glasslaw Burn at the southwestern corner of the site) and a sample from the private water supply well to the east of the farm, and update the SCR and baseline report accordingly.

	EW3 Highway drain	**EW 4 Trib. u/s road**	**EW 5 D/S existing range**	**EW 6 D/S marsh area**	**EW 7 Glasslaw Burn u/s Site**	**EW 8 Glasslaw Burn d/s Site**	**Pond / Spring overflow**
					NJ 856 593	**NJ 861 587**	
Parameter (mg/l)	*Samples not available. Not running (dry conditions) vegetation*			*Samples not available due to extensive surface vegetation*			
pH (units)		7.7	7.55		7.46	7.49	7.79
Suspended solids		2.6	2.7		4.1	2.5	3.6
BOD		<1	<1		<1	<1	2.02
COD		24.9	23.8		31.9	33.5	19.1
Conductivity µS/ cm		228	234		200	219	223
Nitrate		10.4	11.4		1.38	1.67	7.53
Nitrite		<0.05	<0.05		<0.05	<0.05	0.112
Ammonia		<0.2	<0.2		<0.2	<0.2	<0.2
Phosphate		<0.05	<0.05		<0.05	<0.05	<0.05
Chloride		22.3	22.5		28.4	28.4	20.7

SEPA requested sample points at the water supply for the farm, however an overflow of St Catherines well was sampled instead (Pond/spring overflow). Therefore the permit will require the water supply for the farm to be sampled prior to operation. Groundwater monitoring will be required by the permit every 2 years.

Hydrocarbons were not considered as part of the baseline, the existing internally bunded generator is located on a concrete plinth with no evidence of staining to infer accidental spillage. The baseline level of hydrocarbons in soil adjacent to the generator will therefore be taken to be zero. The permit will require soil monitoring for hydrocarbons every 10 years.

5.9 Monitoring (BAT 24, 25, 26, 27 & 29)

SEPA places a lot of emphasis on self-monitoring and record-keeping as the key to successful operation of a PPC installation.

General monitoring of the site is also covered in the Permit as a specific requirement. SEPA expects the company to use monitoring to correct deficiencies within the activity and to alleviate any nuisance.

Monitoring is required to assess operational conditions and environmental performance. Various permit conditions require the operator to monitor the level of inputs and the volume of outputs, to consider how changes made benefit the environment.

The 2017 BREF introduces the following additional monitoring requirements:

1. The total nitrogen and total phosphorus excreted in manure
2. Ammonia emissions to air
3. Dust emissions
4. Process parameters

The European Commission during deliberations around the revised BREF, accepted the proposal from the UK Technical Working Group to estimate emissions by using DEFRA approved emission factors to comply with monitoring requirements for 1-3 above.

Process parameters include water consumption, energy consumption, fuel consumption, the number of incoming and outgoing animals, feed consumption and manure generation. This is already well documented and will be formally required via the resource utilisation permit condition.

5.10 Consideration of BAT and compliance with BAT-Cs if appropriate

It has been demonstrated by the operator and stipulated above that BAT (as per the BREF Document 2017) has been considered for the following:

- Surface water;
- Soil & groundwater;
- Ammonia;
- Dust;
- Odour;
- Noise;
- Raw Materials;
- Water Use;
- Waste;
- Energy.

6 Other Legislation Considered

Nature Conservation (Scotland) Act 2004 & Conservation (Natural Habitats &c.) Regulations 1994

Is there any possibility that the proposal will have any impact on site designated under the above legislation?	**Yes**

SCAIL screening failed and Likely Significant Effect could not be ruled out. See Section 5.2. SEPA and NatureScot therefore carried out an Appropriate Assessment of the impact on the specific habitats and their species.

Tore of Troup SSSI

Tore of Troup SSSI is designated for Upland assemblage and Upland mixed ash woodland/upland birch woodland. It is the upland assemblage feature which consists of blanket bog, wet heath and dry heath components. Pressures are described as water management, invasive species and overgrazing. It is currently assessed as being in favourable/recovering condition with the blanket bog feature showing signs of recovery from past management practices.

Upland mixed ash woodland/Upland birch woodland- Grazing pressure and the presence of rhododendron has resulted in both features being assessed as being in unfavourable condition, although some control of rhododendron has taken place and grazing pressure appears to be reducing, resulting in the unfavourable recovering condition. A recent site check in 2023 suggests that these pressures are still evident at the site.

Conservation objectives for this site are:

- to maintain the current extent and diversity of moorland habitats,
- to encourage recovery of cut-over areas of blanket bog and
- to maintain the current extent and diversity of woodland habitats and encourage natural regeneration of native woodland.

The upland assemblage feature of Tore of Troup SSSI is likely to be the most sensitive to increases in these pollutants. The blanket bog component is likely to be particularly sensitive. However, some components of the woodland features may also be sensitive, eg moschatel and oak fern. Increasing the

level of ammonia concentration and nitrogen deposition may cause species which thrive in higher nitrogen conditions to outcompete species associated with bogs, altering the composition of the habitat. This would negatively affect the extent to which the site is able to meet its management objectives. The attainment of Site Condition Monitoring targets may also be negatively impacted

Turclossie Moss SSSI/SAC

Turclossie Moss SSSI/SAC is designated for degraded raised bog (SAC), Active raised bog (SAC)- and Intermediate bog (SSSI). All features are currently assessed as being in unfavourable declining condition due to the drying of the site caused by past management resulting in a decline in peat-forming species. Scrub encroachment is also an ongoing negative pressure at the site.

All features of Turclossie Moss SSSI/SAC are likely to be sensitive to increases in ammonia concentration and nitrogen deposition. The features of this site are currently assessed as being in unfavourable condition due to the drying out of the habitat and as a result the site may be more sensitive due to being hydrologically compromised.

Conservation objectives for Turclossie Moss refer specifically to nutrient enrichment via aerial deposition of nitrogen, stating that ***increases in nitrogen inputs to the site should be avoided***. Bogs that have been hydrologically compromised are more sensitive to the effects of nitrogen deposition and therefore the natural hydrology of this site should be maintained or where appropriate restored.

Nature Scot advised that mitigation measures should be considered to reduce the impacts on Tore of Troup SSSI and Turclossie Moss SSSI/SAC

Further discussion with applicant on mitigation measures.

The modelling was based on manure removed by a belt collection system at least once per week

The applicant subsequently proposed the installation of a biomass boiler to provide heat which would be blown onto the manure belts to dry the manure. Current advice, accepted by the UK regulatory agencies is to allow a 60% reduction to the multi-tier aviary housing emission factor where belt drying of manure is applied.

Updated advice during the determination of the application which was accepted by the UK regulatory agencies is that free ranging hens spend 10% of their time on the range, and 90% of their time indoors, not 80% and 20% as initially modelled.

SEPA re-ran SCAIL with a 60% reduction for air drying in all sheds to an emission factor derived using the 90/10 split in realistic mode.

In SCAIL there was an error for Tore of Troup SSSI using the conifer woodland critical load of 3 instead of 10 for the woodland features, and as these are woodlands SCAIL used the higher deposition velocity. The model should have assessed against an upland bog/heath habitat with a critical load of 5 and the lower deposition velocity.

SCAIL screening passed with the mitigation and corrections applied

Receptor	PC NH3 as %EAL	PC N Dep as %EAL	PC Acid Dep %EAL
Tore of Troup	3%	3%	2%
Turclossie Moss	3%	3%	2%

The applicant has spoken to the land owner of Turclossie Moss SSSI/SAC and they would be agreeable to them carrying out work to block drains and restore the natural hydrology of this site. This would be an informal agreement and the applicant would look to NatureScot to advise on what work is required and

where. SEPA cannot impose conditions in the PPC permit in relation to land out with the PPC installation boundary.

Ammonia Reduction from Trees
When Nether Glasslaw was built in 2021, Phase 1 planted up to 5% of the range with trees (approx. 1 Ha). The current proposal would aim to increase the area of planted range by another 5% (a further 1 Ha is proposed). This could include not only range type planting but also some more specific structured planting to affect a 'shelter belt' and capture both house emissions and ranging birds. Based on the Centre for Ecology and Hydrology, Ammonia Reduction by Trees (ART) project[2], the applicant calculated that after 10 years, it could be reasonably projected that ammonia could be reduced by 60%. This could equate to the removal of 845Kg of ammonia per year.

In Combination Assessment.

At a late stage during the permit determination, SEPA identified another poultry farm, Cranbog 1.5km away also operated by Farmlay, housing 39,999 birds which is within 10km of Turclossie Moss SSSI/SAC and Tore of Troup SSSI.

The Habitats Risk Assessment for Nether Glasslaw should have included all other relevant projects. This means other planning applications for cattle, pigs, poultry, industrial, traffic developments if relevant, either recently consented but not in the APIS background, in the planning system and at pre-application stages if the air quality information is known.

AS Modelling & Data Ltd undertook modelling in March 2022. As the planning consent for Cranbog was approved on 4th February 2022, SEPA believes that it was reasonable that the applicant should have informed the consultants of this fact, so that they could have included it in the modelling. As SEPA were unaware of it, the model inputs were not challenged. The report does refer to 'in combination' assessments in section 3.4 but doesn't go on to identify any relevant projects and therefore the modelling report referred to in Section 5.2 of this Decision Document was no longer relevant

SEPA requested an updated modelling report which reflects the true process contributions at Turclossie Moss SSSI/SAC and Tore of Troup SSSI taking account of cumulative impacts and mitigation proposed.

Redmore were commissioned to undertake the in-combination modelling which included the use of manure stores at both sites which the AS modelling Data report had overlooked. It used a housing emission factor of 0.0288 kgNH_3/bird place/year to reflect reductions for belt drying and deposition within the poultry house 90% of the time. It also modelled the ranging as an area source across using an emission factor of 0.022 kgNH_3/bird place/year to reflect deposition on the range 10% of the time.

Redmore concluded that PECs for NH_3 concentrations were below 100% of the critical level at all receptors, both for the installation alone and in-combination scenarios. Nitrogen deposition PECs were above 100% of the critical load for all receptors for both the installation alone and in-combination scenarios. Background nitrogen deposition rates already exceed the low critical load for the features at these locations.

Incombination NDep Results for worst case met data year (2010) were:

RECEPTOR	DESIGNATION	FEATURE	CRITICAL LOAD	PC result Worst met year 2010	PC Proportion of CL (%)	PEC result Worst met year 2010	PEC Proportion of CL (%)
E1	Turclossie Moss SAC and SSSI	Active Raised Bog	5	0.1177	2.354	9.7977	195.9

[2] https://farmtreestoair.ceh.ac.uk/sites/default/files/2022-10/tree-shelter-belt-ART-Summary-Report-June-2022.pdf

E2	Turclossie Moss SAC and SSSI	Active Raised Bog	5	0.0979	1.958	10.1379	202.76
E3	Turclossie Moss SAC and SSSI	Active Raised Bog	5	0.0930	1.860	9.8130	196.26
E4	Turclossie Moss SSSI	Intermediate bog (raised)	5	0.0940	1.808	9.8140	196.28
E5	Tore of Troup SSSI	Subalpine dry heath	5	0.1390	2.780	9.2490	184.98
E6	Tore of Troup SSSI	Upland birch woodland	10	0.4979	4.979	15.8379	158.38
E7	Tore of Troup SSSI	Blanket bog	5	0.2121	4.242	9.3221	186.44
E8	Tore of Troup SSSI	Subalpine dry heath	5	0.2570	5.14	9.0470	180.94

Nitrogen deposition at Tore of Troup SSSI was the main concern as the nearest site with the higher percentages of critical load.

SEPA have been working with NatureScot and CEH to develop an online Nitrogen Impacts app which pulls together atmospheric pollution data (both in terms of nitrogen deposition and ammonia data), along with habitat information including nitrogen sensitivity and nitrogen exceedance and NatureScot site information for designated habitats. The aim of the app is to identify local hotspot areas where agricultural/local sources might dominate the local N deposition to an extent that local protected habitat sites are above the critical load/level for potential impacts. Using information from the app, we know that poultry is the largest emission source within 2km of the site (3.4 kg N/ha/yr); also within 2km are cattle (1 kg N/ha/yr) and fertiliser (0.7 kg N/ha/yr).

The applicant has already made significant investment in the addition of belt drying to mitigate ammonia emissions This prompted SEPA to look at possible reductions in relation to fertiliser application or cattle rearing on land in between Cranbog and Tore of Troup SSSI. The applicant responded as follows:

1. The land which has been identified as the ranging area was previously in arable production and would have received organic fertiliser. This area will now be taken out of arable production into permanent grassland, reducing the air emissions from land spreading.
2. A large proportion of the range areas will be planted with trees. At Nether Glasslaw, Phase 1 planted up to 5% of the range (approx. 1 Ha.) when built in 2021. This expansion proposal would aim to also increase the area of planted range by 5%, so a further 1Ha is proposed. This could include not only range type planting but also some more specific structured planting to act as a 'shelter belt' and capture both house emissions and ranging birds. Based on the Centre for Ecology and Hydrology, Ammonia Reduction by Trees (ART) project, the applicant calculated that after 10 years it could be reasonably projected that ammonia could be reduced by 60%. This could equate to removal of 845Kg/yr from Nether Glasslaw.
3. This application will result in a doubling of the volume of manure generated and stored in the Nether Glasslaw manure store, but as a result of the mitigation proposed, the manure from all 4 houses will be very dry (heat applied to forced air drying) effectively halving the nitrogen so effectively no greater volume. Cranbog can also claim this to a degree.
4. Dry manure will not release Nitrogen from manure store (in form of ammonia) even compared with existing manure store.

Advice from NatureScot on the In-combination results were: *Based on the updated modelling report, which considers in-combination effects that may impact Tore of Troup and Turclossie Moss and given the current CL exceedance, we would not consider the additional contribution from the proposal to be significant. The main negative pressure for the upland assemblage feature of Tore of Troup SSSI and the raised bog features of Turclossie Moss SAC is from unfavourable water management. We consider that the features at both sites are likely to be able to accommodate the predicted increase in levels of N deposition and ammonia emissions arising from the proposal without any significant adverse effect*.

Conclusion

The major source of nitrogen in the area is poultry but there is still a considerable amount of nitrogen from cattle and land application which the operator cannot control. The fields identified as ranging areas at both sites will not receive any organic fertiliser in the future and the permit will require tree planting at Glasslaw which will also reduce the volume of atmospheric nitrogen.

The application is for two new sheds at Nether Glasslaw. If SEPA refuse this application , there will still be a considerable source of nitrogen from poultry locally. There is no opportunity to require any mitigation at Cranbog because the bird numbers are below the PPC threshold (although SEPA will be pursuing this separately to understand how the operator is limiting numbers). The only remit to require mitigation at Cranbog was via the Local Planning Department but the planning consent was issued without assessment neither SEPA nor NatureScot were consulted.

Based on the in-combination modelling results, the mitigation proposed by the applicant and advice from NatureScot, SEPA have concluded that the proposal is unlikely to have a significant effect of the features of Tore of Troup and Turclossie Moss.

Screening distance(s) used	10 Kilometres as per the SEPA Nature Conservation Procedure Guidance (NCP-P-01).

Is there any other legislation that was considered during determination of the permit (for example installations that may be impacted by the requirements of legislation involving Animal By Products, Food Standards, Waste, WEEE regulations etc).	**Yes**

Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008:
The applicant has demonstrated that the size of the ranging areas is sufficient that deposition is in accordance with the limit of 170 kg N/hectare.

The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) and Nitrates Directive: This primarily applies to land-spreading activities that will be taking place out with the installation boundary. These will need to comply with GBR 18. See Section 5.4.

Foul drainage systems such as a septic tank to soakaway will be regulated separately under CAR and this will not form part of the permitted installation.

The SUDS systems to treat surface water drainage have potential to impact groundwater and therefore SuDS design must be in accordance with the CREW Rural SuDS Guide. See Section 5.3.

The Water Environment (Miscellaneous) (Scotland) Regulations 2017:
The requirements for generator oil storage under these Regulations are met. See Section 5.2 for consideration of oil storage as BAT. There are no conflicts with ongoing CAR regulation of this process.

Animal By-Products (Enforcement)(Scotland) Regulations 2013:
Regulates carcass disposal. Carcass storage is a is a Directly Associated Activity (DAA) in the permit. See Section 5.7.

Medium Combustion Plant Directive (MCPD):
For all proposed plant >1MW regulated as DAA on IA installations, BAT will apply and SEPA should complete Local Air Quality Management and Nature Conservation Habitat screening. If required, SEPA will impose monitoring of emissions within 4 months and then every 3 years with ELVs from Process Guidance Note 1/3 or the MCPD. There is no proposed plant >1MW on site.

Officer	CO

7 Environmental Impact Assessment and COMAH

How has any relevant information obtained or conclusion arrived at pursuant to Articles 5, 6 and 7 of Council Directive 85/337/EEC on the assessment of the effects certain public and private projects on the environment been taken into account?	
N/A Not a COMAH facility.	
How has any information contained within a safety report within the meaning of Regulation 7 (safety report) of the Control of Major Accident Hazards Regulations 1999 been taken into account?	
N/A Not a COMAH facility.	
Officer:	CO

8 Details of the permit	
Do you propose placing any non standard conditions in the Permit?	**No**
Do you propose making changes to existing text, tables or diagrams within the permit?	**No**
Officer:	CO

9 Emission Limit Values or Equivalent Technical Parameters/Measures	
Are you are dealing with either a permit application, or a permit variation which would involve a review of existing ELVs or equivalent technical parameters?	**No**
Officer:	CO

10 Peer Review	
Has the determination and draft permit been Peer Reviewed?	**Yes**
Comments made:	

Minor spelling and grammar errors corrected. Paragraphs reordered. BAT numbers added.

Technical Decision Document

Non-technical Summary:

- Queried site grid reference.
- Corrected electrical supply via solar panels and supplemented by the grid.
- Queried manure removal frequency and transfer to manure store via conveyor or trailer.
- Addition of concluding paragraphs.

Section 5.2 & 6:

- Omission of SPA.
- Reference for 80/20 emission factor split.
- Include date of modelling reports.
- Reordered paragraphs and suggested conclusion.

Section 5.5

- Queried CAR authorisation for water supply from well.

Section 5.8

- Clarify groundwater and soil monitoring frequencies.

<u>Draft Permit</u>

- Corrected address of Authorised Person.
- Reworded washwater condition to match permit template.

- Reworded manure handling condition.
- Queried site plan and location of waste storage area and chemical store.
- Queried soil monitoring substances.
- Tree shelter belt conditions not complete and plan not in reporting table.

Officer:	Peer Reviewer

11 Final Determination

Issue of a Permit - Based on the information available at the time

Issue a Permit – Based on the information available at the time of the determination SEPA is satisfied that:

- The applicant will be the person who will have control over the operation of the installation/mobile plant,
- The applicant will ensure that the installation/mobile plant is operated so as to comply with the conditions of the Permit,
- The applicant is a fit and proper person (specified waste management activities only),
- Planning permission for the activity is in force (specified waste management activities only),
- That the operator is in a position to use all appropriate preventative measures against pollution, in particular through the application of best available techniques.
- That no significant pollution should be caused.