
SCAIL Modelling Report

Erection of a pullet rearing unit
including silos and associated
works at Tanat Poultry site,
Llanrhaeadr Ym Mochnant

Prepared for G & G Jones



land & property
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1. INTRODUCTION

- 1.1. This statement should be read in conjunction with all the other documents that have been submitted in connection with the planning application for the erection of a pullet rearing unit at Tanat Poultry Site, Llanrhaeadr Ym Mochnant.
- 1.2. The purpose of this SCAIL assessment is to assess the proposed impact the development will have on ecology of the area. In particular, the process contribution on the existing ammonia levels of the area.
- 1.3. Basic Ammonia modelling has been carried out and are discussed and analysed within this statement.

2. LOCATION & PROPOSAL

- 2.1 Tanat Poultry site is an established poultry unit, which is currently un-operational, within the community area of Llanrhaeadr.
- 2.2 The proposed site for the poultry unit is situated on previously developed land, by replacing two existing units.
- 2.3 The proposed building, will be seen as a direct replacement on the yard.

3. PROTECTED ENVIRONMENTAL SITES

- 3.1 Within a 5km radius of the proposed site, there are 6 protected environmental sites. The closest being 2.5km of the proposed site. The closest environmental site is known as Penygarnedd Mine which has no sensitive habitat. The other 5 protected environmental sites are illustrated in the table below:

- Tanat & Vyrnwy Bat Sites – 2.5km – Bat site
- Garth Eryr – 3.9km – No sensitive habitat.
- Coed yr Allt – 4.3km – Woodland.
- Berwyn (SSSI) – 4.6km – Bogs
- Berwyn (SPA) – 4.6km - Bogs

4. SCAIL MODELLING

- 4.1 SCAIL is an acronym for 'Simple Calculation of Atmospheric Impact Limits. It is a basic screening tool to assess the potential impact from agricultural sources on protected environmental sites. The SCAIL assessment provides the assessor with a worst-case scenario of the impact of agricultural developments.
- 4.2 No Integrated Pollution and Prevention Control Permit (IPCC) is required for the free-range unit, given the proposal does not exceed the housing of over 40,000 hens.
- 4.3 The SCAIL modelling provides information on the background concentrations and depositions at the receptor (SSSI's) and the process contribution the proposal will have on those critical levels.
- 4.4 In Appendix 1 you will find the calculations of the SCAIL for the 6 SSSI's which are protected environmental sites for the proposed poultry unit.
- 4.5 In light of the significant distance between the proposal and the designated sites, the process contribution of the proposal at the nearest SSSI's is 2% or 1%.

5. Conclusion

- 5.1 In light of the above assessment and analysis, it is considered that there would be no significant detrimental impact upon any of the environmental sites within 5km of the development.
- 5.2 This means that proposed poultry unit on site will not have a significant impact on the ammonia emissions of the area. This is emphasised by the fact that the existing units on site if renovated and brought back to use would far exceed the contribution this new building would have on the nearest designated sites.
- 5.3 The manure associated with the development will be removed approximately 3 times a year and spread directly onto the land or stored in the existing manure store. A manure management will be prepared as part of the submission, illustrating the method of spreading and the sufficient land available for spreading.

Appendix 1

Proposed Building- Simple Calculation of Atmospheric Impact Limits

Project Details	
Project Notes	Ger Jones Llanrhaeadr
Project Run Mode	<input checked="" type="radio"/> Conservative Met <input type="radio"/> Realistic Met
Location Details	
Select Country	Wales
Installation Details	
Installation	1
Installation Name	Ger jones Tanat
Installation Location	312855,325511 <input type="radio"/> Landranger <input checked="" type="radio"/> x,y CHOOSE/VERIFY LOCATION
Source Details	
Source	1
Source	<input type="radio"/> Pig <input checked="" type="radio"/> Poultry <input type="radio"/> Cattle <input type="radio"/> User defined emissions
New or Existing Source	New
Source Name	Ger jones Tanat
Source Location	Provides a link to GoogleMaps to check the location. 312855,325511 <input type="radio"/> Landranger <input checked="" type="radio"/> x,y VERIFY LOCATION
Source Type	Housing
Type	Pullets
Details	Fan ventilated, fully littered floor, non leaking drinkers
Livestock Number	37000
Housing Floor Area	2000 m ²
Naturally Vented	<input type="checkbox"/>
Building Height	6.7 m
Fan Location	Roof
No. of Fans (optional)	12
Fan Diameter	0.92 m

Fan Flowrate [?](#) m³/s

Total emissions [?](#)

Pollutant	Source Emissions	Running total of all emission sources	Units
NH ₃ :	2220	2220	(kg)
PM ₁₀ :	1221	1221	(kg)
Odour:	583416000	583416000	(kOu)

[GET EMISSIONS VALUES](#) [?](#)

Designated Site details:

Search Radius [?](#) km [?](#) [RUN RECEPTOR SEARCH](#) [?](#)

No. of Designated Sites [?](#) [?](#) [VERIFY RECEPTOR LOCATIONS](#) [?](#)

Site No.	Name	Distance(km)	Designation	Easting	Northing
1	Penygarnedd Mine	2.511	SSSI	310922.2	323907.3
2	Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy	2.512	SAC	310921.8	323907.4
3	Garth-Eryr	3.915	SSSI	316322.1	323693
4	Coed yr Allt	4.316	SSSI	312587.8	321203.7
5	Berwyn	4.592	SSSI	308517	327016.5
6	Berwyn	4.592	SPA	308517	327016.5

User specified site [Add site](#)

Site Name

Site Location Landranger x,y [VERIFY LOCATION](#) [?](#)

Habitat within site [CHECK BACKGROUND LEVELS](#) [?](#)

Human Health Receptor Details

Receptor [Add Receptor](#) [?](#)

Receptor Name

Receptor Location Landranger x,y [VERIFY LOCATION](#) [?](#)

Site Information											
Penygarmedd Mine (SSSI) ▼ ⓘ											
Region:	Wales										
Site Name:	Penygarmedd Mine										
Site Code: ⓘ	6435										
Designation Status: ⓘ	SSSI										
Distance from Installation (m): ⓘ	2511										
Receptor Type:	Habitat										
Grid Reference:	310922.2,323907.3										
Met Site: ⓘ	CROS										
Run Mode: ⓘ	Conservative										
PM ₁₀ Percentile: ⓘ	Average										
Installation Information ⓘ											
No.	Name	No. of sources	No. of new sources	PM ₁₀ (t/a)	NH ₃ (t/a)	Odour (kOu/a)	Conc NH ₃ (µg/m ³)	Dep N (kg/ha/yr)	Dep Acid (kEq H ⁺ /ha/yr)	Conc PM ₁₀ (µg/m ³)	Conc Odour (Ou/m ³)
1	Ger jones Tanat	1	1	-	2.2	-	0.02	0.1	0.007	-	-
Total Depositions/Concentrations and Exceedances ⓘ											
Concentrations/Depositions and Critical Loads/Levels				NH ₃ (µg/m ³)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H ⁺ /ha/yr)	PM ₁₀ (µg/m ³)	Odour (Ou/m ³)			
Process Contribution (PC) at receptor edge				0.02	0.10	0.007	-	-			
Background concentration at receptor edge ⓘ				1.53	20.58	1.72 (N:1.47 S:0.25)	-	-			
Predicted Environmental Concentration/Deposition (PEC) ⓘ				1.55	20.68	1.73	-	-			
Environmental Assessment Level or Critical Load / Level ⓘ				Lower: 1 Upper: 3 ⓘ	No sensitive habitat or species at this site	No sensitive habitat or species at this site	-	-			
<input type="button" value="USE OWN THRESHOLDS?"/>											
% of relevant standard PC ⓘ				Lower: 2% Upper: 1%	n/a	n/a	-	-			
% of relevant standard PEC ⓘ				Lower: 155% Upper: 52%	n/a	n/a	-	-			
EXCEEDANCE ⓘ				Lower: 0.55 Upper: No exceedance	n/a	n/a	-	-			

Site Information Tanat and Vyrnwy Bat Sites / Safleoedd Ystumod Tanat ac Efyrrwy (SAC) ▾

Region: Wales
 Site Name: Tanat and Vyrnwy Bat Sites / Safleoedd Ystumod Tanat ac Efyrrwy
 Site Code: UK0014783
 Designation Status: SAC
 Distance from Installation (m): 2512
 Receptor Type: Habitat
 Grid Reference: 310921.8,323907.4
 Met Site: CROS
 Run Mode: Conservative
 PM₁₀ Percentile: Average

Installation Information

No.	Name	No. of sources	No. of new sources	PM ₁₀ (t/a)	NH ₃ (t/a)	Odour (kOu/a)	Conc NH ₃ (µg/m ³)	Dep N (kg/ha/yr)	Dep Acid (kEq H ⁺ /ha/yr)	Conc PM ₁₀ (µg/m ³)	Conc Odour (Ou/m ³)
1	Ger jones Tanat	1	1	-	2.2	-	0.02	0.15	0.01	-	-

Total Depositions/Concentrations and Exceedances

Concentrations/Depositions and Critical Loads/Levels	NH ₃ (µg/m ³)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H ⁺ /ha/yr)	PM ₁₀ (µg/m ³)	Odour (Ou/m ³)
Process Contribution (PC) at receptor edge	0.02	0.16	0.011	-	-
Background concentration at receptor edge	1.53	30.66	2.49 (N:2.19 S:0.30)	-	-
Predicted Environmental Concentration/Deposition (PEC)	1.55	30.82	2.5	-	-
Environmental Assessment Level or Critical Load / Level	Lower: 1 Upper: 3	10.0 Rhinolophus hipposideros	maxN: 1.34 maxS: 1.05 minN: 0.14 Rhinolophus hipposideros	-	-
ALTERNATIVE CRITICAL LOAD INFO					
USE OWN THRESHOLDS?					
% of relevant standard PC	Lower: 2% Upper: 1%	2%	1%	-	-
% of relevant standard PEC	Lower: 155% Upper: 52%	308%	187%	-	-
EXCEEDANCE	Lower: 0.55 Upper: No exceedance	20.82	1.16	-	-

Site Information											
Garth-Eryr (SSSI)											
Region:	Wales										
Site Name:	Garth-Eryr										
Site Code:	4338										
Designation Status:	SSSI										
Distance from Installation (m):	3915										
Receptor Type:	Habitat										
Grid Reference:	316322.1,323693										
Met Site:	CROS										
Run Mode:	Conservative										
PM ₁₀ Percentile:	Average										
Installation Information											
No.	Name	No. of sources	No. of new sources	PM ₁₀ (t/a)	NH ₃ (t/a)	Odour (kOu/a)	Conc NH ₃ (µg/m ³)	Dep N (kg/ha/yr)	Dep Acid (kEq H ⁺ /ha/yr)	Conc PM ₁₀ (µg/m ³)	Conc Odour (Ou/m ³)
1	Ger jones Tanat	1	1	-	2.2	-	0.01	0.06	0.004	-	-
Total Depositions/Concentrations and Exceedances											
Concentrations/Depositions and Critical Loads/Levels				NH ₃ (µg/m ³)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H ⁺ /ha/yr)	PM ₁₀ (µg/m ³)	Odour (Ou/m ³)			
Process Contribution (PC) at receptor edge				0.01	0.05	0.004	-	-			
Background concentration at receptor edge				1.79	20.02	1.65 (N:1.43 S:0.22)	-	-			
Predicted Environmental Concentration/Deposition (PEC)				1.8	20.07	1.65	-	-			
Environmental Assessment Level or Critical Load / Level				Lower: 1 Upper: 3	No sensitive habitat or species at this site	No sensitive habitat or species at this site	-	-			
				ALTERNATIVE CRITICAL LOAD INFO							
USE OWN THRESHOLDS?											
% of relevant standard PC				Lower: 1% Upper: 0%	n/a	n/a	-	-			
% of relevant standard PEC				Lower: 180% Upper: 60%	n/a	n/a	-	-			
EXCEEDANCE				Lower: 0.80 Upper: No exceedance	n/a	n/a	-	-			
Project Notes											

Site Information Coed yr Allt (SSSI)

Region: Wales
 Site Name: Coed yr Allt
 Site Code: 838
 Designation Status: SSSI
 Distance from Installation (m): 4316
 Receptor Type: Habitat
 Grid Reference: 312587.8,321203.7
 Met Site: CROS
 Run Mode: Conservative
 PM₁₀ Percentile: Average

Installation Information

No.	Name	No. of sources	No. of new sources	PM ₁₀ (t/a)	NH ₃ (t/a)	Odour (kOu/a)	Conc NH ₃ (µg/m ³)	Dep N (kg/ha/yr)	Dep Acid (kEq H ⁺ /ha/yr)	Conc PM ₁₀ (µg/m ³)	Conc Odour (Ou/m ³)
1	Ger jones Tanat	1	1	-	2.2	-	0.01	0.07	0.005	-	-

Total Depositions/Concentrations and Exceedances

Concentrations/Depositions and Critical Loads/Levels	NH ₃ (µg/m ³)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H ⁺ /ha/yr)	PM ₁₀ (µg/m ³)	Odour (Ou/m ³)
Process Contribution (PC) at receptor edge	0.01	0.08	0.005	-	-
Background concentration at receptor edge	1.53	30.86	2.49 (N:2.19 S:0.30)	-	-
Predicted Environmental Concentration/Deposition (PEC)	1.54	30.74	2.5	-	-
Environmental Assessment Level or Critical Load / Level	Lower: 1 Upper: 3	5.0 Broad-leaved, mixed and yew woodland	maxN: 1.54 maxS: 1.25 minN: 0.28 Broad-leaved, mixed and yew woodland	-	-
ALTERNATIVE CRITICAL LOAD INFO					
USE OWN THRESHOLDS?					
% of relevant standard PC	Lower: 1% Upper: 0%	2%	1%	-	-
% of relevant standard PEC	Lower: 154% Upper: 51%	615%	162%	-	-
EXCEEDANCE	Lower: 0.54 Upper: No exceedance	25.74	0.96	-	-

Site Information ▼ ?											
Region:	Wales										
Site Name:	Berwyn										
Site Code: ?	4203										
Designation Status: ?	SSSI										
Distance from Installation (m): ?	4592										
Receptor Type:	Habitat										
Grid Reference:	308517,327016.5										
Met Site: ?	CROS										
Run Mode: ?	Conservative										
PM ₁₀ Percentile: ?	Average										
Installation Information ?											
No.	Name	No. of sources	No. of new sources	PM ₁₀ (t/a)	NH ₃ (t/a)	Odour (kOu/a)	Conc NH ₃ (µg/m ³)	Dep N (kg/ha/yr)	Dep Acid (kEq H ⁺ /ha/yr)	Conc PM ₁₀ (µg/m ³)	Conc Odour (Ou/m ³)
1	Ger jones Tanat	1	1	-	2.2	-	0.01	0.04	0.003	-	-
Total Depositions/Concentrations and Exceedances ?											
Concentrations/Depositions and Critical Loads/Levels				NH ₃ (µg/m ³)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H ⁺ /ha/yr)	PM ₁₀ (µg/m ³)	Odour (Ou/m ³)			
Process Contribution (PC) at receptor edge				0.01	0.05	0.004	-	-			
Background concentration at receptor edge ?				0.95	22.82	1.98 (N:1.63 S:0.35)	-	-			
Predicted Environmental Concentration/Deposition (PEC) ?				0.96	22.87	1.98	-	-			
Environmental Assessment Level or Critical Load / Level ?				Lower: 1 Upper: 3 ?	5.0 Bogs	maxN: 0.74 maxS: 0.42 minN: 0.32 Bogs	-	-			
				ALTERNATIVE CRITICAL LOAD INFO							
USE OWN THRESHOLDS?											
% of relevant standard PC ?				Lower: 1% Upper: 0%	1%	0%	-	-			
% of relevant standard PEC ?				Lower: 96% Upper: 32%	457%	288%	-	-			
EXCEEDANCE ?				Lower: No exceedance Upper: No exceedance	17.87	1.24	-	-			

Site Information											
Berwyn (SPA) ▼ ⓘ											
Region:	Wales										
Site Name:	Berwyn										
Site Code: ⓘ	UK9013111										
Designation Status: ⓘ	SPA										
Distance from Installation (m): ⓘ	4592										
Receptor Type:	Habitat										
Grid Reference:	308517,327016.5										
Met Site: ⓘ	CROS										
Run Mode: ⓘ	Conservative										
PM ₁₀ Percentile: ⓘ	Average										
Installation Information ⓘ											
No.	Name	No. of sources	No. of new sources	PM ₁₀ (t/a)	NH ₃ (t/a)	Odour (kOu/a)	Conc NH ₃ (µg/m ³)	Dep N (kg/ha/yr)	Dep Acid (kEq H ⁺ /ha/yr)	Conc PM ₁₀ (µg/m ³)	Conc Odour (Ou/m ³)
1	Ger jones Tanat	1	1	-	2.2	-	0.01	0.04	0.003	-	-
Total Depositions/Concentrations and Exceedances ⓘ											
Concentrations/Depositions and Critical Loads/Levels				NH ₃ (µg/m ³)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H ⁺ /ha/yr)	PM ₁₀ (µg/m ³)	Odour (Ou/m ³)			
Process Contribution (PC) at receptor edge				0.01	0.05	0.004	-	-			
Background concentration at receptor edge ⓘ				0.95	22.82	2.79 (N:2.35 S:0.44)	-	-			
Predicted Environmental Concentration/Deposition (PEC) ⓘ				0.96	22.87	2.79	-	-			
Environmental Assessment Level or Critical Load / Level ⓘ				Lower: 1 Upper: 3 ⓘ	10.0 Circus cyaneus	maxN: 0.89 maxS: 0.61 minN: 0.14 Milvus milvus	-	-			
				ALTERNATIVE CRITICAL LOAD INFO							
USE OWN THRESHOLDS?											
% of relevant standard PC ⓘ				Lower: 1% Upper: 0%	1%	0%	-	-			
% of relevant standard PEC ⓘ				Lower: 96% Upper: 32%	229%	313%	-	-			
EXCEEDANCE ⓘ				Lower: No exceedance Upper: No exceedance	12.87	1.90	-	-			