
SCAIL Modelling Report

Erection of an organic free
range egg production unit
including silos and all
associated works

Cae Mor Farm, Llwynmawr,
Llangollen, LL20 7BE

Prepared for E & J Morris



land & property
professionals

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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 an organic free range egg production unit at Cae Mor Farm.
- 1.2 The purpose of this SCAIL assessment is to assess the proposed impact the development will have on ecological interest of the area. Particular note is given to the levels of ammonia which shall arise from the proposed poultry unit.
- 1.3 Basic Ammonia modelling has been carried out, and is discussed and analysed within this statement.

2. LOCATION & PROPOSAL

- 2.1 The proposal is on land that is part of Cae Mor Farm. The proposal is located to the North West of the existing range of farm buildings at Cae Mor Farm. The existence of other farm buildings in the locality of the proposed development is beneficial as the development is seen as a natural extension of the farmstead.
- 2.2 It is accessed via a new farm access.
- 2.3 There are no other poultry units in the immediate vicinity, and therefore there will be limited cumulative impact.
- 2.4 The proposal is for the erection of an organic free range egg production unit which will be within a permanent unit, which will be fan ventilated and a manure conveyor belt associated with it.

3. PROTECTED ENVIRONMENTAL SITES

- 3.1 Within a 10km radius of the proposed site, there are 13 designated environmental sites which range from 1.0kms to 9.7kms away.
- 3.2 The 3 closest Ancient Woodlands have also been assessed.

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 (IPPC) 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 protected environmental sites for the proposed poultry unit.
- 4.5 In relation to the proposed poultry unit and its associated emissions, it is calculated that it will have a 1% process contribution at the closest SSSI.
- 4.6 In light of the above calculations, it is envisaged that detailed modelling will not be required on the impact on the SSSI's.

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 10km and therefore no further modelling will need to be undertaken.

Appendix 1

Proposed building Simple Calculation of Atmospheric Impact Limits

Project Details

Project Notes
Cae Mor

Project Run Mode
☒ Conservative Met
☐ Realistic Met

Location Details

Select Country
Wales

Installation Details

Installation
1

Installation Name
Cae Mor

Installation Location
322691,336100
☐ Landranger
☒ x,y

CHOOSE/VERIFY LOCATION

Source Details

Source
1

Source
☐ Pig
☒ Poultry
☐ Cattle
☐ User defined emissions

New or Existing Source
New

Source Name
Cae Mor

Source Location
Provides a link to GoogleMaps to check the location.
322691,336100
☐ Landranger
☒ x,y

VERIFY LOCATION

Source Type
Housing

Type
Barn and free range

Details
Aviary system

Livestock Number
24000

Housing Floor Area
3154 m²

Naturally Vented
☐

Building Height
5.8 m

Fan Location
Roof

No. of Fans (optional)
16

Fan Diameter
1.5 metres

Fan Flowrate
9 m³/s

Total emissions :

Pollutant	Source Emissions	Running total of all emission sources	Units
NH ₃ :	1920	1920	(kg)
PM ₁₀ :	792	792	(kg)
Odour:	1059609600	1059609600	(kOu)

Designated Site details:

Search Radius ^(?) km

[RUN RECEPTOR SEARCH](#) ^(?)

No. of Designated Sites ^(?) 13

[VERIFY RECEPTOR LOCATIONS](#) ^(?)

Site No.	Name	Distance(km)	Designation	Country	Easting	Northing
1	Afon Dyfrdwy (River Dee)	1.084	SSSI	undefined	322370.4	337135.7
2	River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid	1.086	SAC	undefined	322367.4	337136.2
3	Pandy Quarries	2.423	SSSI	undefined	320272.1	335924.6
4	River Dee (England)	3.987	SSSI	undefined	326411.3	337533.7
5	Berwyn	4.267	SPA	undefined	319625.5	339067.7
6	Berwyn a Mynyddoedd de Clwyd / Berwyn and South Clwyd Mountains	4.267	SAC	undefined	319625.5	339067.7
7	Berwyn	4.269	SSSI	undefined	319625	339069.9
8	Caesu Pen-y-Coed	5.494	SSSI	undefined	322386.8	341586
9	Ruabon/Llantysilio Mountains and Minera	6.65	SSSI	undefined	324202	342576.3
10	Dinas Bran	6.873	SSSI	undefined	322296.8	342961.4
11	Nant-y-Belan and Prynella Woods	8.614	SSSI	undefined	329732.8	341062.1
12	Trefonen Marshes	9.546	SSSI	undefined	324241.9	326680.8
13	Fernhill Pastures	9.716	SSSI	undefined	331970.8	333223

User specified site [Add site](#)

Site Name	33138 Ancient Semi Natura
Site Location	322862,335843 ☐ Landranger ☒ x,y VERIFY LOCATION ^(?)
Habitat within site	Broadleaved, Mixed and Yew Woodland CHECK BACKGROUND LEVELS ^(?)

Human Health Receptor Details

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

Receptor Name	
Receptor Location	☐ Landranger ☒ x,y VERIFY LOCATION ^(?)
	CHECK BACKGROUND PM10 LEVELS ^(?)

[SAVE INPUT DATA](#)

[CLEAR FORM](#)

[CALCULATE](#)

Site Information

33138 Ancient Semi Natural Woodland

Region:

Wales

Site Name:

33138 Ancient Semi Natural Woodland

Site Code:

N/A

Designation Status:

User defined

Distance from Installation (m):

309

Receptor Type:

Broadleaved, Mixed and Yew Woodland

Grid Reference:

322862,335843

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	Cae Mor	1	1	-	1.9	-	0.45	2.35	0.159	-	-

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	0.45318	3.50	0.240	-	-
Background concentration at receptor edge	1.45	33.32	2.66 (N:2.38 S:0.28)	-	-
Predicted Environmental Concentration/Deposition (PEC)	1.9	36.82	2.9	-	-
Environmental Assessment Level or Critical Load / Level	Lower: 1 Upper: 3	10.0 Broadleaved, Mixed and Yew Woodland	maxN: 1.64 maxS: 1.36 minN: 0.28 Broadleaved, Mixed and Yew Woodland	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC	Lower: 45% Upper: 15%	35%	15%	-	-
% of relevant standard PEC	Lower: 190% Upper: 63%	368%	177%	-	-
EXCEEDANCE	Lower: 0.90 Upper: No exceedance	26.82	1.26	-	-

Project Notes

Site Information

33137 Ancient Semi Natural Woodland

Region:

Wales

Site Name:

33137 Ancient Semi Natural Woodland

Site Code:

N/A

Designation Status:

User defined

Distance from Installation (m):

531

Receptor Type:

Broadleaved, Mixed and Yew Woodland

Grid Reference:

323094,335754

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	Cae Mor	1	1	-	1.9	-	0.21	1.08	0.073	-	-

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	0.20834	1.60	0.110	-	-
Background concentration at receptor edge	1.45	33.32	2.66 (N:2.38 S:0.28)	-	-
Predicted Environmental Concentration/Deposition (PEC)	1.66	34.92	2.77	-	-
Environmental Assessment Level or Critical Load / Level	Lower: 1 Upper: 3	10.0 Broadleaved, Mixed and Yew Woodland	maxN: 1.63 maxS: 1.35 minN: 0.28 Broadleaved, Mixed and Yew Woodland	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC	Lower: 21% Upper: 7%	16%	7%	-	-
% of relevant standard PEC	Lower: 166% Upper: 55%	349%	170%	-	-
EXCEEDANCE	Lower: 0.66 Upper: No exceedance	24.92	1.14	-	-

Project Notes

Site Information

28906 Ancient Semi Natural Woodland

Region:

Wales

Site Name:

28906 Ancient Semi Natural Woodland

Site Code: ⓘ

N/A

Designation Status: ⓘ

User defined

Distance from Installation (m): ⓘ

835

Receptor Type:

Broadleaved, Mixed and Yew Woodland

Grid Reference:

323478,336380

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	Cae Mor	1	1	-	1.9	-	0.1	0.51	0.034	-	-

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	0.09770	0.76	0.051	-	-
Background concentration at receptor edge ⓘ	1.45	33.32	2.66 (N:2.38 S:0.28)	-	-
Predicted Environmental Concentration/Deposition (PEC) ⓘ	1.55	34.08	2.71	-	-
Environmental Assessment Level or Critical Load / Level ⓘ	Lower: 1 Upper: 3 ⓘ	10.0 Broadleaved, Mixed and Yew Woodland	maxN: 1.61 maxS: 1.33 minN: 0.28 Broadleaved, Mixed and Yew Woodland	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC ⓘ	Lower: 10% Upper: 3%	8%	3%	-	-
% of relevant standard PEC ⓘ	Lower: 155% Upper: 52%	341%	168%	-	-
EXCEEDANCE ⓘ	Lower: 0.55 Upper: No exceedance	24.08	1.10	-	-

Project Notes

Site Information

Afon Dyfrdwy (River Dee) (SSSI)

Region:

Wales

Site Name:

Afon Dyfrdwy (River Dee)

Site Code: ⓘ

5260

Designation Status: ⓘ

SSSI

Distance from Installation (m): ⓘ

1084

Receptor Type:

Habitat

Grid Reference:

322370.4,337135.7

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	Cae Mor	1	1	-	1.9	-	0.06	0.33	0.022	-	-

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	0.06310	0.33	0.022	-	-
Background concentration at receptor edge ⓘ	1.45	21.98	1.78 (N:1.57 S:0.21)	-	-
Predicted Environmental Concentration/Deposition (PEC) ⓘ	1.51	22.31	1.8	-	-
Environmental Assessment Level or Critical Load / Level ⓘ	Lower: 1 Upper: 3 ⓘ	3.0 Standing open water - oligotrophic	maxN: 0.66 maxS: 0.44 minN: 0.22 Fen, marsh and swamp	-	-
			ALTERNATIVE CRITICAL LOAD INFO		
USE OWN THRESHOLDS?					
% of relevant standard PC ⓘ	Lower: 6% Upper: 2%	11%	3%	-	-
% of relevant standard PEC ⓘ	Lower: 151% Upper: 50%	744%	273%	-	-
EXCEEDANCE ⓘ	Lower: 0.51 Upper: No exceedance	19.31	1.14	-	-

Project Notes

Site Information

River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (SAC)

Region:

Wales

Site Name:

River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid

Site Code: ⓘ

UK0030252

Designation Status: ⓘ

SAC

Distance from Installation (m): ⓘ

1086

Receptor Type:

Habitat

Grid Reference:

322367.4,337136.2

Met Site: ⓘ

CROS

Run Mode: ⓘ

Conservative

PM₁₀ Percentile: ⓘ

Average

Installation Information ⓘ

Total Depositions/Concentrations and Exceedances ⓘ

Project Notes

Site Information

Pandy Quarries (SSSI)

Region:

Wales

Site Name:

Pandy Quarries

Site Code:

6463

Designation Status:

SSSI

Distance from Installation (m):

2425

Receptor Type:

Habitat

Grid Reference:

320272.1,335924.6

Met Site:

CR05

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	Cae Mor	1	1	-	1.9	-	0.02	0.1	0.006	-	-

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	0.01841	0.10	0.006	-	-
Background concentration at receptor edge	1.45	21.98	1.78 (N:1.57 S:0.21)	-	-
Predicted Environmental Concentration/Deposition (PEC)	1.47	22.08	1.79	-	-
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	-	-
USE OWN THRESHOLDS? ALTERNATIVE CRITICAL LOAD INFO					
% of relevant standard PC	Lower: 2% Upper: 1%	n/a	n/a	-	-
% of relevant standard PEC	Lower: 147% Upper: 49%	n/a	n/a	-	-
EXCEEDANCE	Lower: 0.47 Upper: No exceedance	n/a	n/a	-	-

Project Notes

Site Information

River Dee (England) (SSSI)

Region:

Wales

Site Name:

River Dee (England)

Site Code: ⓘ

4106

Designation Status: ⓘ

SSSI

Distance from Installation (m): ⓘ

3987

Receptor Type:

Habitat

Grid Reference:

326411.3,337533.7

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	Cae Mor	1	1	-	1.9	-	0.01	0.05	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	0.00914	0.05	0.003	-	-
Background concentration at receptor edge ⓘ	1.89	21.28	1.71 (N:1.52 S:0.19)	-	-
Predicted Environmental Concentration/Deposition (PEC) ⓘ	1.9	21.33	1.71	-	-
Environmental Assessment Level or Critical Load / Level ⓘ	Lower: 1 Upper: 3 ⓘ	Rivers and streams	Rivers and streams	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC ⓘ	Lower: 1% Upper: 0%	n/a	n/a	-	-
% of relevant standard PEC ⓘ	Lower: 190% Upper: 63%	n/a	n/a	-	-
EXCEEDANCE ⓘ	Lower: 0.90 Upper: No exceedance	n/a	n/a	-	-

Project Notes

Site Information

Berwyn (SPA)

Region:

Wales

Site Name:

Berwyn

Site Code:

UK9013111

Designation Status:

SPA

Distance from Installation (m):

4267

Receptor Type:

Habitat

Grid Reference:

319625.5,339067.7

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	Cae Mor	1	1	-	1.9	-	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	0.00830	0.04	0.003	-	-
Background concentration at receptor edge	1.03	23.52	2.80 (N:2.46 S:0.34)	-	-
Predicted Environmental Concentration/Deposition (PEC)	1.04	23.56	2.8	-	-
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%	0%	0%	-	-
% of relevant standard PEC	Lower: 104% Upper: 35%	236%	315%	-	-
EXCEEDANCE	Lower: 0.04 Upper: No exceedance	13.56	1.91	-	-

Project Notes

Site Information

Berwyn a Mynyddoedd de Clwyd / Berwyn and South Clwyd Mountains (SAC)

Region:

Wales

Site Name:

Berwyn a Mynyddoedd de Clwyd / Berwyn and South Clwyd Mountains

Site Code:

UK0012926

Designation Status:

SAC

Distance from Installation (m):

4267

Receptor Type:

Habitat

Grid Reference:

319625.5,339067.7

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	Cae Mor	1	1	-	1.9	-	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	0.00830	0.04	0.003	-	-
Background concentration at receptor edge	1.03	23.52	1.95 (N:1.68 S:0.27)	-	-
Predicted Environmental Concentration/Deposition (PEC)	1.04	23.56	1.95	-	-
Environmental Assessment Level or Critical Load / Level	Lower: 1 Upper: 3	5.0 Blanket bogs	maxN: 0.55 maxS: 0.23 minN: 0.18 Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC	Lower: 1% Upper: 0%	1%	0%	-	-
% of relevant standard PEC	Lower: 104% Upper: 35%	471%	355%	-	-
EXCEEDANCE	Lower: 0.04 Upper: No exceedance	18.56	1.40	-	-

Project Notes

Site Information

Berwyn (SSSI)

Region:

Wales

Site Name:

Berwyn

Site Code: ⓘ

4203

Designation Status: ⓘ

SSSI

Distance from Installation (m): ⓘ

4269

Receptor Type:

Habitat

Grid Reference:

319625,339069.9

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	Cae Mor	1	1	-	1.9	-	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	0.00829	0.04	0.003	-	-
Background concentration at receptor edge ⓘ	1.03	23.52	1.95 (N:1.68 S:0.27)	-	-
Predicted Environmental Concentration/Deposition (PEC) ⓘ	1.04	23.56	1.95	-	-
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: 104% Upper: 35%	471%	264%	-	-
EXCEEDANCE ⓘ	Lower: 0.04 Upper: No exceedance	18.56	1.21	-	-

Project Notes

Site Information

Caeau Pen-y-Coed (SSSI)

Region:

Wales

Site Name:

Caeau Pen-y-Coed

Site Code: ⓘ

4806

Designation Status: ⓘ

SSSI

Distance from Installation (m): ⓘ

5494

Receptor Type:

Habitat

Grid Reference:

322386.8,341586

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	Cae Mor	1	1	-	1.9	-	0.01	0.05	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	0.00578	0.04	0.003	-	-
Background concentration at receptor edge ⓘ	1.34	30.66	1.69 (N:1.48 S:0.21)	-	-
Predicted Environmental Concentration/Deposition (PEC) ⓘ	1.35	30.7	1.69	-	-
Environmental Assessment Level or Critical Load / Level ⓘ	Lower: 1 Upper: 3 ⓘ	5.0 Broad-leaved, mixed and yew woodland	maxN: 0.90 maxS: 0.53 minN: 0.37 Acid grassland	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC ⓘ	Lower: 1% Upper: 0%	1%	0%	-	-
% of relevant standard PEC ⓘ	Lower: 135% Upper: 45%	614%	188%	-	-
EXCEEDANCE ⓘ	Lower: 0.35 Upper: No exceedance	25.70	0.79	-	-

Project Notes

Site Information

Ruabon/Llantysilio Mountains and Minera (SSSI)

Region:

Wales

Site Name:

Ruabon/Llantysilio Mountains and Minera

Site Code: ⓘ

5695

Designation Status: ⓘ

SSSI

Distance from Installation (m): ⓘ

6650

Receptor Type:

Habitat

Grid Reference:

324202,342576.3

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	Cae Mor	1	1	-	1.9	-	0	0.02	0.002	-	-

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	0.00441	0.02	0.002	-	-
Background concentration at receptor edge ⓘ	1.34	20.72	1.69 (N:1.48 S:0.21)	-	-
Predicted Environmental Concentration/Deposition (PEC) ⓘ	1.34	20.74	1.69	-	-
Environmental Assessment Level or Critical Load / Level ⓘ	Lower: 1 Upper: 3 ⓘ	10.0 Calcareous grassland	maxN: 0.88 maxS: 0.24 minN: 0.50 Dwarf shrub heath	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC ⓘ	Lower: 0% Upper: 0%	0%	0%	-	-
% of relevant standard PEC ⓘ	Lower: 134% Upper: 45%	207%	192%	-	-
EXCEEDANCE ⓘ	Lower: 0.34 Upper: No exceedance	10.74	0.81	-	-

Project Notes

Site Information

Dinas Bran (SSSI)

Region:

Wales

Site Name:

Dinas Bran

Site Code: ⓘ

4939

Designation Status: ⓘ

SSSI

Distance from Installation (m): ⓘ

6873

Receptor Type:

Habitat

Grid Reference:

322296.8,342961.4

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	Cae Mor	1	1	-	1.9	-	0	0.02	0.001	-	-

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	0.00421	0.02	0.002	-	-
Background concentration at receptor edge ⓘ	1.34	20.72	1.69 (N:1.48 S:0.21)	-	-
Predicted Environmental Concentration/Deposition (PEC) ⓘ	1.34	20.74	1.69	-	-
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: 0% Upper: 0%	n/a	n/a	-	-
% of relevant standard PEC ⓘ	Lower: 134% Upper: 45%	n/a	n/a	-	-
EXCEEDANCE ⓘ	Lower: 0.34 Upper: No exceedance	n/a	n/a	-	-

Project Notes

Site Information

Nant-y-Belan and Prynella Woods (SSSI)

Region:

Wales

Site Name:

Nant-y-Belan and Prynella Woods

Site Code:

6298

Designation Status:

SSSI

Distance from Installation (m):

8614

Receptor Type:

Habitat

Grid Reference:

329732.8,341062.1

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	Cae Mor	1	1	-	1.9	-	0	0.02	0.002	-	-

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	0.00308	0.02	0.002	-	-
Background concentration at receptor edge	1.78	31.78	2.53 (N:2.27 S:0.26)	-	-
Predicted Environmental Concentration/Deposition (PEC)	1.78	31.8	2.53	-	-
Environmental Assessment Level or Critical Load / Level	Lower: 1 Upper: 3	5.0 Broad-leaved, mixed and yew woodland	maxN: 1.88 maxS: 1.52 minN: 0.36 Broad-leaved, mixed and yew woodland	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC	Lower: 0% Upper: 0%	0%	0%	-	-
% of relevant standard PEC	Lower: 178% Upper: 59%	636%	135%	-	-
EXCEEDANCE	Lower: 0.78 Upper: No exceedance	26.80	0.65	-	-

Project Notes

Site Information

Trefonen Marshes (SSSI)

Region:

Wales

Site Name:

Trefonen Marshes

Site Code: ⓘ

1913

Designation Status: ⓘ

SSSI

Distance from Installation (m): ⓘ

9546

Receptor Type:

Habitat

Grid Reference:

324241.9,326680.8

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	Cae Mor	1	1	-	1.9	-	0	0.02	0.001	-	-

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	0.00268	0.02	0.001	-	-
Background concentration at receptor edge ⓘ	1.92	34.30	1.74 (N:1.56 S:0.18)	-	-
Predicted Environmental Concentration/Deposition (PEC) ⓘ	1.92	34.32	1.74	-	-
Environmental Assessment Level or Critical Load / Level ⓘ	Lower: 1 Upper: 3 ⓘ	5.0 Broad-leaved, mixed and yew woodland	maxN: 4.32 maxS: 4.10 minN: 0.22 Fen marsh and swamp - lowland	-	-
			ALTERNATIVE CRITICAL LOAD INFO		
USE OWN THRESHOLDS?					
% of relevant standard PC ⓘ	Lower: 0% Upper: 0%	0%	0%	-	-
% of relevant standard PEC ⓘ	Lower: 192% Upper: 64%	686%	40%	-	-
EXCEEDANCE ⓘ	Lower: 0.92 Upper: No exceedance	29.32	-2.58	-	-

Project Notes

Site Information

Fernhill Pastures (SSSI)

Region:

Wales

Site Name:

Fernhill Pastures

Site Code:

3801

Designation Status:

SSSI

Distance from Installation (m):

9716

Receptor Type:

Habitat

Grid Reference:

331970.8,333223

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	Cae Mor	1	1	-	1.9	-	0	0.01	0.001	-	-

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	0.00261	0.01	0.001	-	-
Background concentration at receptor edge	2.53	21.70	1.70 (N:1.55 S:0.15)	-	-
Predicted Environmental Concentration/Deposition (PEC)	2.53	21.71	1.7	-	-
Environmental Assessment Level or Critical Load / Level	Lower: 1 Upper: 3	10.0 Fen marsh and swamp - lowland	maxN: 0.62 maxS: 0.25 minN: 0.22 Fen marsh and swamp - lowland	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% of relevant standard PC	Lower: 0% Upper: 0%	0%	0%	-	-
% of relevant standard PEC	Lower: 253% Upper: 84%	217%	274%	-	-
EXCEEDANCE	Lower: 1.53 Upper: No exceedance	11.71	1.08	-	-

Project Notes

SSSI Name	Background Levels		Contribution to ammonia average (NH3) concentration from this proposal	Critical level for habitat (ug)	% contribution to NH3 critical levels (CL for habitat is 3ug)*	Contribution to Nitrogen (N) deposition from this proposal	CL for habitat (kg/ha/yr)	% contribution to N critical loads (CL for habitat Low Level)
	NH3 (ug)	N (kg)						
33138 Ancient Semi Natural Woodland	1.45	33.32	0.45318	3	15.1%	3.50	10	35%
33137 Ancient Semi Natural Woodland	1.45	33.32	0.20834	3	6.9%	1.60	10	16%
28906 Ancient Semi Natural Woodland	1.45	33.32	0.09770	3	3.25%	0.76	10	7.6%
Berwyn	1.03	23.52	0.00830	3	0.27%	0.04	10	0.4%
Berwyn a Mynyddoedd de Clwyd / Berwyn and South Clwyd Mountains	1.03	23.52	0.00830	3	0.27%	0.04	5	0.8%
Berwyn	1.03	23.52	0.00829	3	0.27%	0.04	5	0.8%
Caeau Pen-y-Coed	1.34	30.66	0.00578	3	0.19%	0.04	5	0.8%
Ruabon/Llantysilio Mountains and Minera	1.34	20.72	0.00441	3	0.14%	0.02	10	0.2%
Nant-y-Belan and Prynella Woods	1.78	31.78	0.00308	3	0.10%	0.02	5	0.4%
Trefonen Marshes	1.92	34.30	0.00268	3	0.08%	0.02	5	0.4%
Fernhill Pastures	2.53	21.70	0.00261	3	0.08%	0.01	10	0.1%