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

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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.

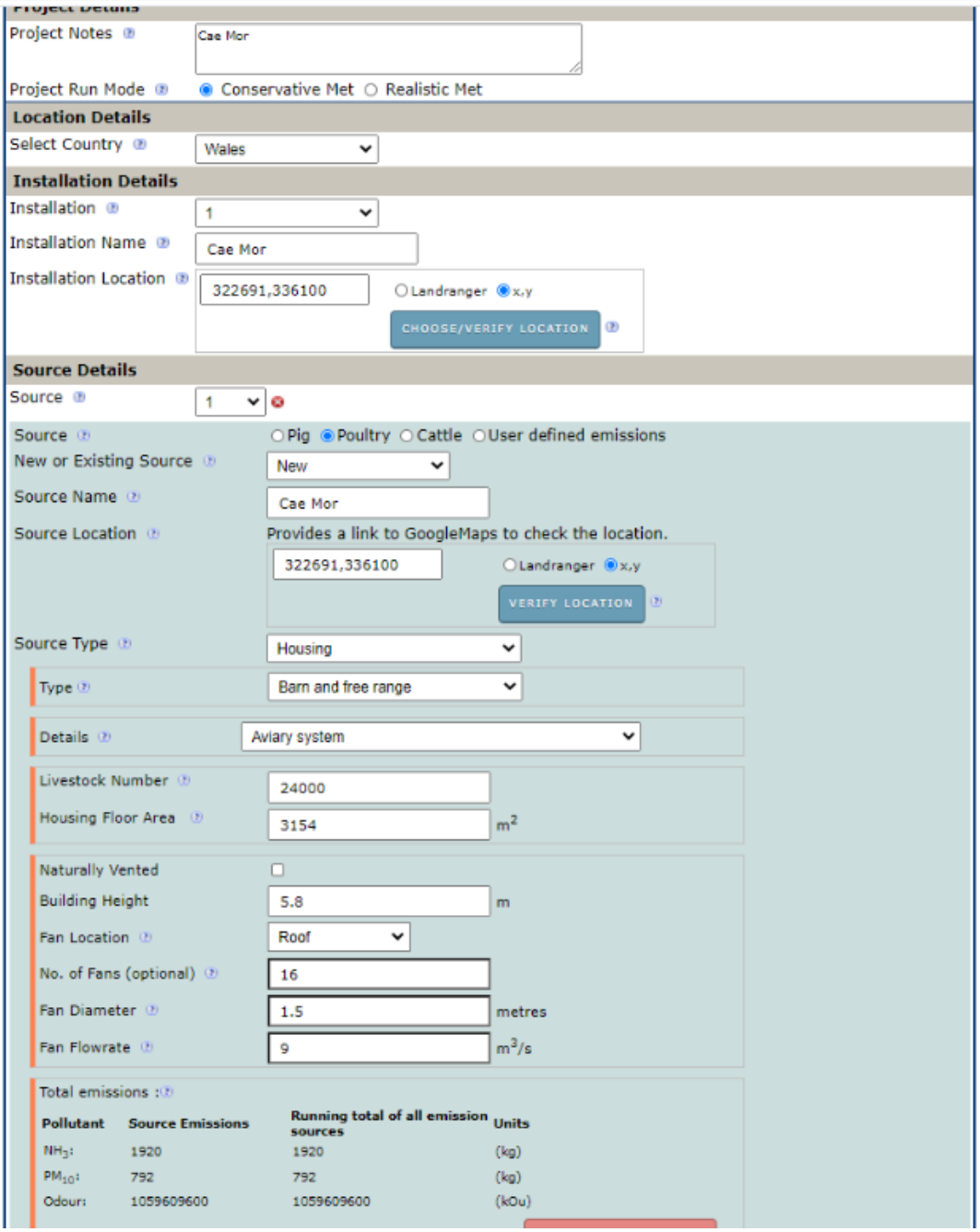
4.6 In light of the above calculations, it is envisaged that detailed modelling will not be required on the impact on the SSSI's.

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 m^2

Naturally Vented: ☐

Building Height: 5.8 m

Fan Location: Roof

No. of Fans (optional): 16

Fan Diameter: 1.5 metres

Fan Flowrate: 9 m^3/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 10 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	2.425	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	Caeau 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 Prynela 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 1 — 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 Select — Add Receptor

PM_{10} percentile: Annual Average

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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	maxN: 1.63 maxS: 1.35 minN: 0.28 Broadleaved, Mixed and Yew Woodland	-	-
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	maxN: 1.61 maxS: 1.33 minN: 0.28 Broadleaved, Mixed and Yew Woodland	-	-
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	maxN: 0.66 maxS: 0.44 minN: 0.22 Fen, marsh and swamp	-	-
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
Process Contribution (PC) at receptor edge	0.06295	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 Luronium natans ALTERNATIVE CRITICAL LOAD INFO	Cottus gobio	-	-
USE OWN THRESHOLDS?					
% of relevant standard PC	Lower: 6% Upper: 2%	11%	n/a	-	-
% of relevant standard PEC	Lower: 151% Upper: 50%	744%	n/a	-	-
EXCEEDANCE	Lower: 0.51 Upper: No exceedance	19.31	n/a	-	-

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:	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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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	-	-
		ALTERNATIVE CRITICAL LOAD INFO			
USE OWN THRESHOLDS?					
% 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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	Rivers and streams	-	-
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	maxN: 0.89 maxS: 0.61 minN: 0.14 Milvus milvus	-	-
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	maxN: 0.90 maxS: 0.53 minN: 0.37 Acid grassland	-	-
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	maxN: 0.88 maxS: 0.24 minN: 0.50 Dwarf shrub heath	-	-
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	No sensitive habitat or species at this site	-	-
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 Prynela Woods (SSSI)

Region:	Wales
Site Name:	Nant-y-Belan and Prynela 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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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
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/m3)	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM_{10} (µg/m3)	Conc Odour (Ou/m3)
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/m3)	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM_{10} (µg/m3)	Odour (Ou/m3)
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 ALTERNATIVE CRITICAL LOAD INFO	maxN: 0.62 maxS: 0.25 minN: 0.22 Fen marsh and swamp - lowland	-	-
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 Prynela 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%