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Maelor Foods Ltd. Pickhill Lane, Wrexham LL13 0UE

Planning Application P/2022/0820
Wrexham County Borough Council



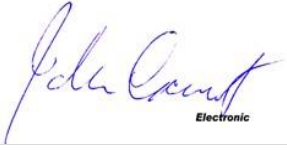
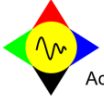
Technical Note
Noise Impact Assessments – Updated and Additional
Information

18 December 2024

Prepared by:

J E Grant	Acoustics & Environmental Consultant	 Electronic	 Acoustics Environment
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Checked & approved by:

J E Grant	Acoustics & Environmental Consultant	 Electronic	 Acoustics Environment
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Client:

Maelor Foods Ltd. Pickhill Lane Cross Lanes Wrexham LL13 0UE	
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SUMMARY

This Technical Note reviews and examines a collated range of data concerning Background Sound Levels (BSLs) used in assessing noise impacts in context of: i) an IPPC permit variation granted in regard to Maelor Foods Ltd.; and ii) a pending planning application resulting from this. Both of these are for the purpose of proposals on behalf of the company to increase production capacity of poultry products.

This work has been carried out to address various concerns raised by Wrexham County Borough Council in their dealings with the pending planning application. These concerns relate to predicted noise impacts that could subsequently arise from the Maelor Foods site if planning permission is granted.

Predicted noise impacts due to changes in production and plant operations have been rated in respect to four neighbouring residential sites using British Standard BS 4142. The ratings take account of extensive noise mitigation required by Natural Resources Wales as part of the IPPC permit variation.

BSLs are considered on the basis of the most current data recorded from attended site surveys in 2023 and 2024.

It is concluded that, with the required noise mitigation in place, BS 4142 noise impacts will be categorised as “low”, which is the lowest rating category described in the standard and below the alternative rating categories of “adverse impact”, and “significant adverse impact”.

Furthermore, as part of increasing production capacity there is a beneficial off-set afforded, whereby the opportunity is available to secure betterment in terms of noise impacts on surrounding premises over and above those associated with the current level of site operations.

1.0 INTRODUCTION

- 1.1 This Technical Note has been prepared to assist in the determination by Wrexham County Borough Council of planning application, reference P/2022/0820 to double production capacity at Maelor Foods Ltd., Pickhill Lane, Cross Lanes, Wrexham LL13 0UE. It has been prepared following discussions with council officers, and in particular correspondence exchanges between Graham Aveyard Specialist Public Protection Officer (Environmental Health) and the council's planning services.
- 1.2 In summary, for the purposes of determining the planning application the council's Environmental Health service has now confirmed that the following outstanding matters are required to be addressed:
- ii. Realistic background noise levels are proposed for receptor position A (properties around Marlbrook House, Pickhill Lane) for agreement with Wrexham CBC.
 - iii. Noise modelling or calculated abated noise levels for each location (A to E) are provided. (Please provide sufficient evidence that these can be followed and if necessary repeated.)
 - iiii. A new BS 4142 assessment is reported using the agreed background noise levels, and the resultant abated noise levels at each location (A to E).
- 1.3 Correspondence detailing the above requirements is set out in an email authored by Graham Aveyard, produced at Appendix 1 to this Technical Note.
- 1.4 It is important that this Technical Note is read having reference to the following preceding documents that have relevance to the planning application:
- i. Noise Impact Assessment. Environoise. 6th Issue 22 December 2022). **'REPORT 1'**
 - ii. Supplementary Noise Assessment: Environmental Permit EPR/AB3591ZQ Application for Variation. (Acoustics Environment 27 October 2023 Report to Natural Resources Wales). **'REPORT 2'**
 - iii. Updated Noise Impact Assessment. Environmental Permit EPR/AB3591ZQ Application for Variation. (Acoustics Environment 29 January 2024 Report to Natural Resources Wales). **'REPORT 3'**

- iv. Appendices to Updated Noise Impact Assessment. Environmental Permit EPR/AB3591ZQ Application for Variation. (Acoustics Environment 29 January 2024 Report to Natural Resources Wales). **‘REPORT 3A’**
- v. Noise Impact Assessment: Night-time HGV movements on Pickhill Lane. (Acoustics Environment 26 June 2024 Report to Wrexham Borough Council in support of Planning Application P/2022/0820). **‘REPORT 4’**
- vi. Appendices to Noise Impact Assessment: Night-time HGV movements on Pickhill Lane. (Acoustics Environment 26 June 2024 Report to Wrexham Borough Council in support of Planning Application P/2022/0820). **‘REPORT 4A’**
- vii. Letter to Cassidy & Ashton (Architects, Planners, Surveyors & Construction Advisers) Noise Impact Assessment – Additional Considerations on Background Sound Levels (Acoustics Environment 11 October 2024). **‘LETTER 1’**
- viii. Letter to Cassidy & Ashton (Architects, Planners, Surveyors & Construction Advisers) Noise Impact Assessment – Additional Considerations on Background Sound Levels (Acoustics Environment 20 October 2024).). **‘LETTER 2’**

2.0 BACKGROUND SOUND LEVELS $L_{A90,T}$

Overview

- 2.1 There have been several discussions with the council having regard to noise impact assessments, and this has principally distilled to a main consideration of residential properties on Pickhill Lane in the immediate area of the site entrance to Maelor Foods, and determining what amounts to representative Background Sound Levels notably during night-time.
- 2.2 To represent this location, the property Marlbrook House, Pickhill Lane has been used as a default for assessment/monitoring surveys in 2023/2024. All other agreed locations are depicted in Report 2¹.
- 2.3 The following table has been collated to review and expand upon previously reported data. In considering BSLs the primary intention is to focus on the most current measurement data sets.

Background Sound Levels $L_{A90,T}$ dB (Maelor Foods operational)				
Data Source	Daytime 07:00 – 23:00	Night-time 23:00 – 07:00	Location	Comments
Environoise				
2014	39 - 40	28 - 32	Unspecified – assumed Marlbrook House, Pickhill Lane	As reported by Wrexham BC (Pre-Maelor Foods)
13 to 16 July 2020 (Report 1)	41	32	Maelor Site Opposite Marlbrook House, Pickhill Lane	Unattended measurements in the vicinity of Site A
	50	40	Maelor Site (north), Pickhill Lane	Unattended measurements north of site
Acoustics Environment				
29 to 30 September & 2 October 2023 (Reports 2 & 3)	42	38	Marlbrook House, Pickhill Lane (Site A)	Attended measurements
	42	44	Pickhill Old Farm complex (Site B)	Attended measurements
	42	42	White Gate Cottage, Pickhill Lane (Site C)	Attended measurements
	40	34	Mayfield House, Talwrn Lane (Site D)	Attended measurements
	n/a	n/a	Porthygan Farm, Cross Lanes (Site E)	Site discounted ²

¹ Report 2 Figure 2.2: Background Noise-Receptor Sites

² Report 2 at 2.4

Background Sound Levels $L_{A90,T}$ dB (Maelor Foods operational)

Data Source	Daytime 07:00 – 23:00	Night-time 23:00 – 07:00	Location	Comments
Acoustics Environment				
14 to 15 June 2024 (Letter 1)	n/a	35	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 23.00 - 00.00
	n/a	36	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 23.00 - 01.00
	n/a	43	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 06.00 - 07.00
	n/a	42	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 05.00 - 7.00
	n/a	31	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 23.00 - 7.00
	n/a	38	Marlbrook House, Pickhill Lane (Site A)	Attended measurements Mean value 23.00 - 7.00
Acoustics Environment				
19 to 20 June 2024 (Letter 2)	n/a	36	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 23.00 - 00.00
	n/a	35	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 23.00 - 01.00
	n/a	43	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 06.00 - 07.00
	n/a	40	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 05.00 - 7.00
	n/a	34	Marlbrook House, Pickhill Lane (Site A)	Attended measurements - Mode value 23.00 - 7.00
	n/a	40	Marlbrook House, Pickhill Lane (Site A)	Attended measurements Mean value 23.00 - 7.00
Wrexham CBC				
8 October 2024	n/a	35	Marlbrook House, Pickhill Lane (Site A) (Assumed)	Assumed attended measurements (Comparable to early night-time June 2024)
	n/a	36	Marlbrook House, Pickhill Lane (Site A) (Assumed)	Assumed attended measurements (Comparable to early night-time June 2024)

Key	
	Data invalidated on account of: i) age/timeline; and/or ii) unattended measurements; and/or iii) location(s)
	Data valid on account of: i) timeline(s); and ii) attended measurements; iii) location(s); and iv) representative periods of measurements for daytime and night-time

Representative Background Sound Levels $L_{A90,T}$ dB (Maelor Foods operational) – Marlbrook House, Pickhill Lane (Site A)	
Daytime	Night-time
49	36

BS 4142 and Background Sound Levels (BSLs)

2.4 British Standard BS 4142: 2014+A1:2019 *Methods for rating and assessing industrial and commercial sound* offers the following relevant points and advice on BSLs:

- It is important to ensure values are reliable and suitably represent both the particular circumstances and periods of interest
- The purpose is not to simply ascertain a lowest measured level, but rather to quantify what is typical during particular time periods.
- BSLs can in some circumstances legitimately include industrial and/or commercial sounds that are present (as in this case for an extant installation seeking to undergo a change)
- The middle of the night can be distinctly different (and potentially of lesser importance) compared to the start or end of the night-time period for sleep purposes.

2.5 For the requirements of noise impact assessments, it is relevant to appraise BSLs using BS 4142 in context of existing activities. Attended measurements are used as primary data since their validity can be established.

Night-time (23:00 to 07:00)

2.6 For night-time, using measurements at Marlbrook House (Site A) or the immediate area provides for a reported range of values spanning 31 to 43 dB(A).

- 2.7 Measurements for the latter part of the night-time (covering the shoulder period to the start of daytime) demonstrates BSLs are elevated comparative to other periods of the night.
- 2.8 For the purposes of sleep interference, it is known the onset of night-time is most relevant, i.e. when people are trying to get to sleep. Incidents of awakenings specifically attributed to noise are rare, which is reflected in BS 4142 commentary.
- 2.9 Noting as previously mentioned the BS 4142 objective is not simply to ascertain a lowest measured BSL, it is reasonable and appropriate to appraise the on-set of the night-time period and the immediate period thereafter.
- 2.10 Mr Aveyard has suggested a preference to consider modal values. This approach is generally applicable for large data sets, which is technically the case for attended measurements carried out in June 2024³ which utilised contiguous 1-second measurements throughout the night. Analysis of the data now indicates a representative night-time BSL at Site A is of the order 35-36 dB(A) averaging to 36 dB(A), which is 2 dB(A) lower than reported in Report 3 using dis-aggregated 15 minute averaged values.

Daytime (07:00 to 23:00)

- 2.11 Relevant measurement surveys carried out during September and October 2023 in respect of four surrounding residential locations are set out in Report 2⁴.
- 2.12 **Consolidated and Revised Background Sound Levels**

Background Sound Levels $L_{A90,T}$ dB (Maelor Foods operational)		
Daytime 07:00 – 23:00	Night-time 23:00 – 07:00	Location
42	36	Marlbrook House, Pickhill Lane (Site A)
44	42	Pickhill Old Farm complex (Site B)
42	42	White Gate Cottage, Pickhill Lane (Site C)
40	34	Mayfield House, Talwrn Lane (Site D)

³ Report 4

⁴ Report 2 Section 4.0

- 2.13 For the purposes of rating and assessment of noise impacts BSLs during normal operations at Maelor Foods are of specific in the application of BS 4142, since it is the associated impacts brought about by proposed operational (and plant/site) changes over and above current levels of permitted activities that merit appraisal.
- 2.14 The council has referenced BSLs when the Maelor site was closed which have been used as part of noise rating calculations for Natural Resources Wales which were higher than could be expected most of the time. This is explained by the contemporaneous site notes in Report 2⁵. The BSLs and ratings are not relevant to the pending planning application, concerning only part of the reporting method implementation and policy required by Natural Resources Wales in dealing with IPPC permitting.

⁵ Report 2 Appendix 2

3.0 NOISE IMPACTS

Noise Modelling

- 3.1 Prediction of noise levels brought about by proposed increases in production at Maelor Foods is set out in Report 1. The doubling of product throughput takes account of both plant and HGV noise to derive rating levels⁶.
- 3.2 For the purposes of a required variation to the Maelor Foods IPPC permit, Reports 1, 2 & 3 have previously been submitted to Natural Resources Wales. The IPPC application to this end has since been approved.

BS 4142 Ratings

- 3.3 Revised BS 4142 rating impacts of site noise are set out in Report 2⁷. Combined plant noise and HGV movements produce modified values compared to Report 1 and are now further updated below for an adjustment to BSLs to fulfil BS 4142 requirements.

BS 4142 Ratings: Rating Levels (HGV & Plant Noise) – BSL, dB(A)			
Location	Day 07:00 – 23:00	Night 23:00 – 07:00	Location
Site A	49 – 42 = +7	49 – 36 = +13	Marlbrook House, Pickhill Lane
Site B	32 – 44 = -12	32 – 44 = -10	Pickhill Old Farm complex
Site C	32 – 42 = -10	32 – 42 = -10	White Gate Cottage, Pickhill Lane
Site D [#]	32 – 40 = -8	32 – 34 = -2	Mayfield House, Talwrn Lane

[#] A -6 dB additional correction for distance can be further applied as the rating is assumed as per Site C

- 3.4 The rating levels for plant noise produced in Report 1 have been modified by application of an additional correction factor (character penalty) of +3 dB, which was not originally applied. It can be seen that irrespective of intended mitigation measures, impacts at site B, C and D are not of concern.

⁶ Report 1 Sections 4.0 & 5.0

⁷ Report 2 Section 6.0

4.0 NOISE MITIGATION

- 4.1 Report 3 sets out a very substantial range of mitigation measures to be implemented as part of the variation to the IPPC permit⁸. These form regulatory requirements under the IPPC permit (Noise Management Plan) and have a considerable bearing on the planning application.
- 4.2 Details of the expected mitigation have been produced by messrs Jacobs Bond Pascoe⁹. Noise control measures already introduced are included in Report 3.
- 4.3 Notwithstanding specifications of mitigation provided by Jacobs Bond Pascoe, a highly conservative approach is purposely applied to the extent of attenuation as a precautionary stance. This includes using an acoustic barrier loss of only -5 dB(A) equating to 'line-of-sight' between noise source(s) and receptor(s), and -3 dB(A) attenuation for specific measures. ± 3 dB is a minimum change perceptible under normal conditions as referred to in Planning Guidance (Wales), Technical Advice Note (Wales) 11, Noise (October 1997).
- 4.4 Given the predicted impacts, and noting combined attenuation factors cautiously uses logarithmic summation to provide c.-10 dB(A) rather than applying linear addition, only receptor Site A is technically an exceedance of the BSL. Overall, noise mitigation to be achieved is intended to provide for betterment over and above current site operations.

Modified Impact Ratings for Proposed Production Changes - All Noise Mitigation Applied (minimum attenuation)			
Location	Day 07:00 – 23:00	Night 23:00 – 07:00	Location
Site A	-3 dB(A) ^{a,b,c,d}	+3 ^{a,b,c,d}	Site A: Marlbrook House, Pickhill Lane
Site B	-22 dB(A) ^{a,c,d,e,f}	-20 ^{a,c,d,e,f}	Site B: Pickhill Old Farm complex
Site C	-20 dB(A) ^{a,c,d,e,f}	-20 ^{a,c,d,e,f}	Site C: White Gate Cottage, Pickhill Lane
Site D	-18 dB(A) ^{a,c,d,f}	-12 ^{a,c,d,f}	Site D: Mayfield House, Talwrn Lane
^a Barrier attenuation -5 dB(A) applied ^b Chiller plant cladding/shielding -3 dB(A) applied ^c Exhaust louvres -3 dB(A) applied ^d HVAC units -3 dB(A) applied ^e Aeration Blowers/Effluent Treatment Plant -3 dB(A) ^f Existing Scrubber Unit -3 dB(A)			

⁸ Report 3 Appendix 2

⁹ Report 3 Section 7.0

5.0 SUPPLEMENTARY COUNCIL COMMENTS

- 5.1 The council has also commented on the following points (Appendix 1):
- that historic BSLs were not reported
 - on unusual activity when BSLs were assessed with the site closed that was not reported in the assessment (that is assumed to mean Report 3)
- 5.2 Previous BSLs as determined by Environoise (Report 1¹⁰) are referred to in Report 2¹¹. Data relating to periods prior to the Maelor Foods becoming operational in 2017 has not been included.
- 5.3 Report 2 contains detailed information on a range of prevailing factors affecting the noise climate during assessments¹². These factors provide information on elevated BSLs during surveys undertaken when the Maelor Foods site was closed.
- 5.4 Mention is also made by the council in respect of a BSL value of 47 dB(A). This value relates to Report 2¹³ and concerns a daytime period at Marlbrook House (monitoring Site A) when the Maelor site was closed. Further comment compares and contrasts this value to a BSL of 41 dB(A) in Report 1¹⁴ which is derived from unattended monitoring at the Maelor Site carried out by Environoise in July 2020 which has been surpassed by surveys in 2023 and 2024.

¹⁰ Report 1 at 3.2.1

¹¹ Report 2 at 5.10

¹² Report 2 Appendix 2

¹³ Report 2 at 6.23

¹⁴ Report 1 at 3.21

Appendix 1

From: Graham Aveyard
Sent: 01 November 2024 09:18
To: planning_admin <planning_admin@wrexham.gov.uk>
Cc: Matthew Phillips <Matthew.Phillips@wrexham.gov.uk>
Subject: Maelor Foods, Wrexham - P/2022/0820

From: Graham Aveyard
To: Mathew Philips Public Protection Service Manager Head of Service Planning Development Our Ref: Your Ref: P/2024/0820 & 840

Date: 01-11-24

Town and Country Planning Act 1990 Town and Country Planning (General Development Procedure) Order 1996 Re: P/2022/0840, MAELOR POULTRY PICKHILL LANE CROSS LANES WREXHAM LL13 0UE ESTYNIAD I WAITH TRIN DŴR GWASTRAFF, CYNIGION LLEIHOU SŴN CYSYLLTIEDIG A GWAITH CYSYLLTIEDIG / EXTENSION TO WASTE WATER TREATMENT WORKS, ASSOCIATED NOISE MITIGATION PROPOSALS AND ASSOCIATED WORKS

Maelor Foods BS4142 revision

Ref Maelor Foods Ltd, Pickhill Lane, Wrexham P/2022/0820

I respond in relation to the letter from John Grant and Guy Evans dated 11th October 2024.

A great deal of the discussion we had during the recent meeting related to what was proposed as the Background Noise Level within the Report Section Second Schedule 5 response (called Report A), and the supporting Appendices dated 15th November 2023.

Those discussion determined that during the period of no factory operation the daytime background noise levels were taken during a period of unusually high levels of local activity including the Bangor on Dee races, which would directly impact on the measurements taken. The result was that the background levels reported and subsequently used in your calculations were in fact much higher than could be expected most of the time. This unusual activity was not reported in the assessment report, nor were any other historic levels supplied in previous applications referred to.

Review of that report show the conclusions are directly impacted by the choice of background level which Wrexham Council disputes.

Below is a review of all available information and evidence for establishing an agreed background noise level for both the daytime and night time.

In addition Wrexham Council made a visit to monitor the background levels at around 9pm on a still and calm night (08/10/2024) where two 15 minute background levels were established to be 35 and 36 dB(A). As far as we could determine the plant was operating as normal during the monitoring period.

An earlier EnvironNoise Report submitted by the applicant in 2022 shows background noise levels whilst the plant was operating to be 41 dB(A). Both of these levels are significantly below the level quoted in Report A as being 47 dB(A).

The error (or typo) contained in the table within para 5.12 of Report A also further increases the background noise levels (for non-operational periods) from 32 to 35 dB(A)> there is no justification made as to why this has been done and it cannot be established whether this has then continued to be used into later

calculations as this detail was not then included in the report.

Finally a series of works of noise abatement are proposed to be carried out which will reduce the overall noise levels of the operational plant, both now and in the future however the actual or predicted noise levels at each of the receptor locations has not been shown, and only the calculated changes from background shown in the conclusion of reported with no demonstration about how these figures were derived.

I therefore summarise what information is requiring review, recalculation or clarification at the end of this reply.

Here is the detail of my concerns.

Revised Background L₉₀

Source	Operational	Daytime	Night
Report A (second schedule 5 response)	N	47 dB(A) (impacted by unusual noise sources)	32 dB(A)*
14-15 June 2024- 23:00 – 01:00	Y		35 & 36 dB(A)
14-15 June 2024- 05:00 – 07:00	Y	42 & 43 dB(A)	
14-15 June 2024 (Whole of Night)	Y		32 dB(A)
EnviroNoise 2014	N/K	39 – 40 dB(A)	28 – 32 dB(A)
EnviroNoise Report 2022 (submitted as part of the application)	Y	41 dB(A)	32 dB(A)
WCBC monitoring 08/10/2024 (21:00 – 21:30)	Y	35 & 36 dB(A)	
WCBC Suggested L ₉₀ (no operation)	N	36 - 41 dB(A)	32 dB(A)
Rating Levels of future operations (plus agreed 1dB traffic)		55 (+1) dB(A)	51 (+1) dB(A) 52 (+1)* dB(A) (tab 5.10)
Difference (no mitigation)	N	+15 dB(A) to +20 dB(A)	+21 dB(A)
Increased		+6 to +11 dB(A)	+3 dB(A)

***5.12 Table – Why has the night time background changed to 35 dB(A) in the table from 32 dB(A)**

Noise Assessment discussion

I note within the Report A (second schedule 5 response) the estimated pre mitigation increased noise levels over background L₉₀ changed for night time in table 5.12 from 32 to 35 dB(A). What effect does this have on the later tables showing the specific sound levels over the background? What was the reason for this change?

My initial estimates of the impacts of the changes in background levels for pre mitigation levels are a minimum of +6 dB(A) daytime (and potentially +11 dB(A)) and +3 dB(A) night time. This makes pre mitigation BS 4142 assessments between 15 and 21 dB(A) above background levels.

Although each proposed abatement option is individually reported in para 7.1, there is no calculated resultant specific sound level for each location quoted in the report. I would expect that some form of modelling, (such as CADNA) or calculations to have been carried out and reported to determine this level. All that is quoted is a series of estimated BS4142 ranges within the table in para 7.4.

The Report proposes a significant noise reduction from abatement on the facility to achieve acceptable levels at the neighbouring residential properties based on the proposed background noise levels. Given that our opinion is that those background noise levels are in fact further reduced due to the reasons given above

there remains significant uncertainty as to whether the impact of the proposed development remains acceptable.

Summary

- Given that the background noise levels have changed from those used within Report A (Schedule 5 second response) the calculated impacts in Table 7.4 require recalculation.
- The specific noise levels resulting from both the attenuated the existing plant and future plant needs to be demonstrated for each of the receptor locations.
- This should be in the form of noise modelling plans or specific noise levels supported by sufficient workings so the process and calculations can be understood.
- Although we do expect that the properties in location A to be the most sensitive however we would like to see the outputs for the other receptors identified in Report A.

Recommendation

Before I can make a final assessment of the potential impact of the noise on existing (and remaining) receptors I therefore ask that the applicant provides:-

1. Realistic background noise levels are proposed for receptor position A (properties around Marlbrook House, Pickhill Lane) for agreement with Wrexham CBC.
2. Noise modelling or calculated abated noise levels for each location (A to E) are provided. (Please provide sufficient evidence that these can be followed and if necessary repeated.)
3. A new BS4142 assessment is reported using the agreed background noise levels, and the resultant abated noise levels at each location (A to E).

Graham Aveyard

Swyddog Arbenigol Gwarchod y Cyhoedd (Iechyd yr Amgylchedd) / Specialist Public Protection Officer (Environmental Health)