Air Quality and Permit Review:

Calderdale Valley Skip Hire Small Waste Incineration Plant

November 2021

Experts in air quality management & assessment

Document Control

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Job Number	J12920

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Document Status and Review Schedule

Report No.	Date	Status	Reviewed by
J12920/A/F1	23 November 2021	Final Report	Dr Ben Marner (Director of Air Quality Modelling and Assessment)

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Executive Summary

A review of the Environmental Permit application and associated air quality technical information for the Calder Valley Skip Hire (CVSH) Small Waste Incinerator Plant (SWIP) has been undertaken.

While no 'Major' issues have been found that, individually, are likely to significantly alter the conclusions stated by the applicant within its air quality assessments; there are areas of uncertainty with the applicant's roads modelling verification and assessment of the significance of benzo(a)pyrene emissions that, combined, could affect the conclusions of the assessment. Furthermore, additional justification is considered to be required on the suitability of the proposed stack height. As the air quality assessment is a supporting document of the permit application, these issues affect the determination of the permit and introduce uncertainty as to whether enough information has been requested by CMBC to robustly determine the application.

A number of other 'Moderate' issues have been identified, such as the absence of any assessment of the total bodily intake of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (collectively referred to as 'dioxins') and dioxin-like polychlorinated biphenyls (PCBs), and no assessment of impacts on local wildlife sites within 2 km in the latest air quality assessment addendum.

With regard to the Environmental Permit application itself, several areas have been identified that introduce uncertainty with respect to the ability of the plant and/or of the Operator to comply in full with the requirements of Chapter IV of the IED. However, it is expected that such issues could be resolved with further requests for information, rather than a fundamental inability of the plant to meet the requirements of IED and of the permit. Despite this, it is a requirement that all information required to determine an application is provided and the permitting authorities should not determine an application until they are satisfied they have received all relevant information. Therefore, we believe further information is required in order for the permit application to be robustly determined.

Furthermore, there are several areas (such as the transport of Air Pollution Control residues through the WTS installation boundary) where it is advised legal opinion is sought before deciding whether to pursue this as a matter for further consideration.

For ease of reading, the issues have been summarised in the table below; however, these should always be considered in context of the complete discussion points raised in the main body of the report before reaching any conclusions.

Executive Summary Table		
No.	**Issue**	**Conclusion**
Review of Air Quality Assessment		
Moderate Issues		
1	Uncertainty	Uncertainty is an inherent component of any scientific method. The uncertainty assigned to a result represents the range of values around the result in which the true value is expected to lie. The true value is a conceptual term, which can never be exactly determined. The basis for challenge three of the judicial review is that WYG's (acting as expert reviewer for Calderdale Metropolitan Borough Council) sensitivity modelling identified more than negligible impacts as being possible. This focusses on the assumption that either the background or the process contribution from the applicant's site could be greater than that reported in the assessment. The WYG report states that it is possible that moderate adverse effects may occur, but then goes on to discount these without any real justification. While we do not necessarily agree with the way WYG has undertaken its sensitivity analysis (adding arbitrary percentages to different baselines), we do agree that the potential for impacts greater then negligible cannot be immediately discounted. This is based on information provided by the applicant about the baseline and process contribution from the incinerator stack.
2	Benzo(a)pyrene	Within the 2019 additional air quality assessment, the applicant predicts a 'worst-case' Benzo(a)pyrene process contribution, i.e., that relating to emissions from the SWIP processes in isolation, of 9% of the Air Quality Standard, and predicted environmental concentration of 98.4%, i.e., the SWIP process contribution plus contributions from other emission sources. This level of impact is presented at the location of maximum impact anywhere on the modelled grid. The applicant needs to provide more information to justify that the contribution is insignificant.
3	Stack Height Determination	The applicants chosen stack height has not been demonstrated to meet the principle of BAT. The applicant has not demonstrated all pollutant contributions to nearby receptors are insignificant; the stack height should be at a height where the cost of increasing the stack becomes disproportionate to the marginal environmental benefit gained unless an insignificant process contribution can be identified at a lower stack height. This has not been demonstrated in this case.
4	Ecological Impacts	The applicant has not assessed the impacts at nearby ancient woodland and local nature reserve ecological sites within their ES addendum or their 2019 additional Air Quality Assessment. These sites are within the 2 km screening distance for assessment of ecological sites required by the Environment Agency.
5	Roads Modelling Verification and Model Adjustment	Examination of the applicant's verification analysis has shown the model to underpredict at monitoring sites SB20 and SB22 (which are located approximately 35 m from Receptor 8) and overpredict at monitoring sites SB3 and AQS4 (which are located nearly 450 m from Receptor 8). Given that Receptor 8 is close to the unpredicting sites, and is registering at or above the objective (depending on the year chosen), the methodology for the model verification, and approach to calculating the correction factor, may not be suitably precautionary.

Executive Summary Table		
No.	**Issue**	**Conclusion**
6	Assessment of 1-hour mean NO_2 Concentrations	The applicant has not undertaken an assessment against the short-term NO_2 objective using the half-hourly emissions limit within IED and their permit. Rather, the daily average emission concentration has been used for assessing hourly mean impacts. As the plant is permitted to discharge NOx at levels up to 400 mg/Nm^3 for a period of 30-minutes, there is the potential for hourly averaged emission concentrations to exceed the daily averaged emission limit that has been modelled leading to potential underestimation of hourly mean impacts.
7	Human Health Risk Assessment for Persistent Organic Pollutants	No HHRA for dioxins and furans and PCBs has been undertaken. Such an assessment addresses impacts relating to bioaccumulation in the food chain for pollutants which cannot be adequately assessed by referring to ambient air quality standards. In practice, the methods available for such an assessment are relatively crude and thus tend to be over-precautionary, but the results can still provide reassurance as to the scale of impacts. The experience of the reviewers, consistent with research and the latest position of Public Health England, is that waste incineration plant meeting the IED emission limits and with an appropriately optimised stack height, only provide negligible contributions to the TDI and the more precautionary TWI. However, in this case, due to the potential issues identified with the justification of the selected stack height, a HHRA should not just be viewed as a procedural exercise.
Minor Issues		
8	Carbon Monoxide 1-hour EAL	The applicant has not undertaken an assessment against the Carbon Monoxide 1-hour Environmental Assessment Level (EAL) of 30,000 µg/m^3. In the experience of the reviewers, carbon monoxide emissions are generally insignificant compared to the environmental standards. As there are no predicted significant effects towards the 8-hour CO objective, lack of consideration of the 1-hour EAL is unlikely to alter the conclusion of the assessment.
9	TOC Emissions	The applicant has not undertaken an assessment of the likely emissions of total organic compounds (TOC). It is a requirement within chapter IV of IED that emissions to air from waste incineration plants shall not exceed the emission limit value of 10 mg/Nm^3 for TOC; therefore, any robust assessment should consider the sites impact from TOC.
10	Surface Roughness	It is unclear why the applicant has chosen to use such a high surface roughness value within their sensitivity analysis. This has the potential to over represent the turbulence effects in the area.
Review of Permitting Application		
11	Implications of Multiple Permits on the Same Site	The proposed Calder Valley Skip Hire site consists of an existing household, commercial and industrial waste transfer station, including treatment, and the proposed Schedule 13 SWIP. The waste operations in the waste transfer station are regulated by the Environment Agency under Environmental Permit EPR/SP3196ZQ, whilst the operations of the SWIP were to be regulated by Calderdale Metropolitan Borough Council under Environmental Permit S13/005. It is not entirely unusual that multiple permits exist with different regulators on the same site.

Executive Summary Table		
No.	**Issue**	**Conclusion**
		One potential complicating factor of the proposed permitting arrangement at the site relates to the transport of Air Pollution Control residues (APCr). APCr are classed as hazardous waste principally due to their high pH content. The WTS permit does not allow the acceptance of hazardous waste. However, due to the way that the permit boundaries are defined, APCr must be transported through the WTS permitted installation boundary before it leaves the wider site. It is unclear whether the transportation of APCr through the WTS installation boundary would convey a degree of 'acceptance', or whether this would simply be considered the same as APCr transport on the wider road network. If this was to constitute 'acceptance', then the WTS would be operating outside the conditions of its permit. In any case, it would have been advisable for the Accident Management Plan for the WTS to be updated to reflect that there is the potential for hazardous waste to pass through its installation boundary. However, many of the issues raised in this section, are procedural. Consequently, such matters are best judged by a legal professional.
12	Installation Boundaries	From review of the introductory note in the Environmental Permit for the WTS permit and surrender notice, it is clear the intent was to remove (partial surrender) only the area associated with the SWIP installation from the existing WTS permit. We suspect any apparent area of unregulated land has arisen through accidental omission/interpretation of the figures, rather than specific intent, and better quality images or revised plans could resolve such matters. However, as currently drafted, it does appear there is a small area of land that is not regulated under either permit.
13	Further request for information	There are a number of issues, detailed from Paragraph 4.23 onwards, that require clarification before the robustness of the applicant's permit application can be suitably determined. Without this further information, it cannot be robustly determined that the applicant's operation will meet with the requirements of IED, the Environmental Permitting Regulations, or minimise harm to people and the environment.

Contents

1 Introduction

1.1 Air Quality Consultants Ltd (AQC) has been commissioned to review the Environmental Permit application and associated air quality technical information for the Calder Valley Skip Hire (CVSH) Small Waste Incinerator Plant (SWIP).

1.2 This report has been complied by reviewing the following documents:

- Schedule 13 SWIP Permit Application document and associated appendices (written by RPS);
- Schedule 13 Environmental Permit (ref. S13/005) issued by Calderdale Metropolitan Borough Council (CMBC);
- Schedule 5 notice for further information from CMBC to the permit application and the applicant's Schedule 5 response;
- CVSH Environmental Permit for the existing Waste Transfer Station (EPR/SP3196ZQ/V002) and Schedule 7 site plan;
- ES Addendum To 2017 ES Chapter 7: Air Quality (written by RPS);
- Appendix 3.1- Environmental Statement Addendum – Additional Air Quality Assessment (written by RPS); and
- Environmental Permit Application S13/005 Small Waste Incineration Plant Air Quality Considerations (written by WYG).

1.3 The site already has planning permission. An Environmental Permit to operate a Schedule 13 Small Waste Incineration Plant was granted by CMBC under the Environmental Permitting (England and Wales) Regulations 2016, as amended ('EPR'), on 9 February 2021. However, the permit was quashed by the High Court on the 17 September 2021 following an application for judicial review. Four grounds of challenge were put forward, and CMBC and CVSH consented to the permit being quashed on the basis of Ground 1 with the parties reserving their positions in relation to the other grounds:

- **Ground of Challenge 1** - The decision was unlawful because the Council erred in law in believing that, if the application was not determined on 8 February 2021, then it would be deemed to be refused. Consequently, the Council acted unlawfully, by relying on this error of law, in: (a) not having requested further information as an option and in deciding to approve the application without requesting further information; (b) deciding to use urgency to disapply the call-in procedures.
- **Ground of Challenge 2** - The Cabinet had no rational basis for failing to follow the WYG recommendation that more information be obtained on habitats and emissions, including sulphur dioxide.

- **Ground of Challenge 3** - The Council failed to have regard to relevant considerations, namely guidance in the Environmental Permitting General Guidance Manual on Policy and Procedures for A2 and B installations (GGM) on the assessment of harm. It applied a test which was not in the guidance.
- **Ground of Challenge 4** - The SWIP environmental permit and the varied waste management licence permit on most of the remainder of the site leave an unregulated area around the incinerator building. The incinerator could not therefore operate. There is also a series of activities which are part of the incinerator operation, as described in the application, which would take place in the Waste Management Licence ("WML").

1.4 The above grounds of challenge have been considered during writing of this review, with the following also considered:

- whether the air quality assessment is robust;
- whether the reported conclusions are supported by the evidence provided;
- whether the information presented is sufficient to understand the likely air quality impacts of the scheme; and
- whether the permit application is robust in its measures to protect the environment and nearby residents and is in line with the air quality assessment undertaken.

1.5 Where errors or omissions have been identified in the air quality assessment, they have been categorised as either a:

- **Major Issue** - in the opinion of the reviewer, any one individual failing would be highly likely to invalidate the reported conclusions;
- **Moderate Issue** - weaknesses have been identified which, individually, may or may not affect the conclusions; or
- **Minor Issue** - weaknesses have been identified but the professional experience of the reviewers suggests that each one, in isolation, would be unlikely to affect the conclusions of the assessment. There remains, however, the potential for multiple minor issues to combine to invalidate the reported conclusions. Minor issues have also been identified where the material presented is misleading or otherwise inappropriate to inform consultation.

1.6 A review of any material related to the construction phase and to the release of odours has not been undertaken. Both of these impacts can generally be effectively controlled by standard mitigation practices. Additionally, SWIP permits only consider operational phase emissions, not construction.

2 Competence

2.1 Adam Dawson is a Senior Consultant with AQC with over eight years' experience in the field of air quality assessment. He has been part of the Environment Agency's Air Quality Modelling and Assessment Unit (AQMAU), which is embedded within the National Permitting Service. He has thus reviewed many technical reports for large installations, including energy from waste facilities, on behalf of Central Government. He has advised Central Government whether the material submitted is sufficient for the granting of permits and has also provided a similar service for local governments. In addition, he regularly undertakes air quality assessments for AQC, covering a mixture of uses, including industrial installations, energy centres and waste facilities. He has experience using a range of dispersion models including ADMS-Roads, ADMS-5 and Breeze AERMOD to complete quantitative modelling assessments, for both planning and permitting purposes. He is a Member of the Institute of Air Quality Management and an Associate Member of the Institution of Environmental Sciences.

2.2 Adam Clegg is an Associate Director with AQC, with over sixteen years' experience, specialising in industrial emissions. He is a member of the Institute of Air Quality Management, has previously contributed his time to, and authored publications on behalf of, the Energy Institute's Emissions Working Group, and has acted as peer reviewer for the Journal of Air & Waste Management. His expertise includes ambient and stack emissions monitoring, emission inventory development and reporting, atmospheric dispersion modelling, abatement of air emissions, environmental permitting, Best Available Technique (BAT) assessments, cost-benefit analysis and compliance assessment. He has extensive experience in the quantification and assessment of emissions from a variety of releases, covering point source emissions, flare emissions, fugitive emissions and emissions from mobile transport sources, including marine vessels, on-road and off-road vehicles and rail locomotives. He has detailed knowledge of the technologies and techniques to reduce concentrations of combustion and non-combustion related pollutants, including oxides of nitrogen, acid gases (e.g., SO_2, HF, HCl), volatile organic compounds (VOCs), particulates, heavy metals and odour.

2.3 Dr Ben Marner is the Director of Air Quality Modelling and Assessment at Air Quality Consultants Ltd. and is thus technical lead of one of the largest specialist air quality teams in the UK. He has more than two decades of experience in air quality modelling and assessment and has been responsible for more than one thousand air quality assessments, covering a range of different types of development, including Energy from Waste facilities. He is a member of the Institution of Environmental Sciences (IES), a member of the Institute of Air Quality Management (IAQM), and a chartered scientist (CSci). He has advised Defra, the Environment Agency, the Joint Nature Conservation Committee (JNCC), Highways England, the Scottish Government, Transport Scotland, Transport for London, and numerous local authorities. He also contributed to several of the air quality

guidance documents cited in the ES[1]. He currently advises the UK Government on air quality as part of its Air Quality Expert Group (AQEG). He has recently advised the UK Government on issues related to, amongst others: ultrafine airborne particles; impacts of vegetation on air pollution; air pollution from agriculture; non-exhaust emissions from road traffic; methods for assessing impacts on air quality; emissions of volatile organic compounds; impacts of greenhouse gas reduction measures on UK air quality; and the effects of COVID-19 on UK air quality[2]. His specific area of expertise within AQEG relates to air quality assessment in the development control process, including assessing the air quality impacts of proposed industrial emissions sources on ambient air quality[3].

1 i.e. Defra's Local Air Quality Management Technical Guidance, and guidance documents from the Institute of Air Quality Management (IAQM) on land-use planning and development control, and assessment of dust from demolition and construction.

2 https://uk-air.defra.gov.uk/library/aqeg/publications.

3 https://uk-air.defra.gov.uk/library/aqeg/about

3 Review of Air Quality Assessment

Summary

3.1 Following a review of the documents listed in Paragraph 1.2, no 'Major' issues have been found that are likely to significantly alter the conclusions stated by the applicant within their air quality assessments.

3.2 There are potential uncertainties with the assessment of nitrogen dioxide impacts within the nearby Air Quality Management Area (AQMA), 670 m away, that may suggest greater than *negligible* impacts are possible.

3.3 Other 'Moderate' issues identified include the assessment of the significance of benzo(a)pyrene emissions, justification for the selected stack height, the absence of any assessment of the total bodily intake of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (collectively referred to as 'dioxins') and dioxin-like polychlorinated biphenyls (PCBs), and no assessment of impacts on local wildlife sites within 2 km in the latest air quality assessment addendum.

Major Issues

3.4 No major issues have been identified following the review of the air quality assessment and various addenda.

Moderate Issues

Uncertainty

3.5 Uncertainty is an inherent component of any scientific method. The uncertainty assigned to a result represents the range of values around the result in which the true value is expected to lie. The true value is a conceptual term, which can never be exactly determined.

3.6 Dispersion modelling is associated with inherent uncertainties due to the attempts made within the model to replicate atmospheric turbulence, a stochastic process, using deterministic methods. Additional uncertainty arises from assumptions made by the model user in defining e.g., surface characteristics, treatment of building induced effects and treatment of terrain, and uncertainty in the model input data e.g., uncertainty in emission estimates and meteorological input data.

3.7 For some scientific tests, it is relatively straightforward to determine the level of uncertainty. However, when considering the uncertainty associated with the result from a dispersion model, this task is much more complicated, since not only is there uncertainty in the measurements and parameters input to the model, there is also uncertainty associated with imperfect knowledge or approximations made within the model itself. It can be extremely complex to quantify the uncertainty associated with each of these factors and model uncertainty is highly site specific.

3.8 Dispersion models which are used for regulatory applications in the UK are generally expected to achieve a performance of 50% of predicted hourly concentrations being within a factor of two of monitored ambient concentrations.

3.9 However, some factors may decrease the model performance, particularly as the complexity of the model domain increases. For example, the uncertainty in any particular model's prediction is likely to be greater in large, urban areas than compared to predictions made in a flat, rural location away from buildings or other obstructions impeding atmospheric flow. Conversely, other factors may improve model performance; considering the statistics of the modelled and monitored ambient concentrations, which is relevant for regulatory applications, rather than concentrations paired in time and space, increases the performance. Similarly, increasing the averaging time, for instance from hourly to 3-hourly, 24-hour and annual will generally improve the model performance.

3.10 In this case, due to the complexity of the terrain within the modelling domain, as well as monitoring data within the nearby AQMA measuring at or above the NO_2 Air Quality Standard, small levels of uncertainty have the potential to change the categorised impacts and, potentially, the conclusions of the assessment.

3.11 Because of this, the applicant has undertaken a number of sensitivity tests to understand the potential consequences of uncertainty in the modelling. The applicant has generally undertaken the sensitivity tests in accordance with best practice guidance[4] by using multiple dispersion models, multiple sites providing meteorological data, multiple years of meteorological data, assessment of calm meteorological conditions and multiple surface roughness values. While we do not agree with the applicant's surface roughness sensitivity (see Paragraph 3.36), the sensitivity analysis, overall, seems robust.

3.12 The basis for challenge three of the judicial review is that WYG's (acting as expert reviewer for CMBC) sensitivity modelling identified more than negligible impacts as being possible. This focusses on the assumption that either the background or the process contribution from the applicant's site could be greater than that reported in the assessment. The WYG report states that it is possible that moderate adverse effects may occur, but then goes on to discount these without any real justification.

3.13 While we do not necessarily agree with the way WYG have undertaken its sensitivity analysis (adding arbitrary percentages to different baselines), we do agree that the potential for impacts greater then *negligible* cannot be immediately discounted[5]. This is based on the following:

[4] Defined by the Environment Agency in its *Environmental permitting: air dispersion modelling reports guidance*. https://www.gov.uk/guidance/environmental-permitting-air-dispersion-modelling-reports#carry-out-sensitivity-analysis

[5] Using the impact table (Table 6.3) and methodology contained within the IAQM Land-Use Planning & Development Control: Planning For Air Quality guidance.

- taking the NO_2 value of 40 µg/m^3 measured in 2019 at diffusion tube SB22[6], 35m away from receptor 8 (Mill West), and used within the assessment to identify effects in the AQMA, compounded by the potential issue identified with the applicant's model verification (see Paragraph 3.23), it is not certain that the baseline concentration in the AQMA will be below 37.8 µg/m^3. This value acts as the point at which a 0.2 µg/m^3 (0.5%) increase from baseline conditions could be considered '*slight adverse*' under impact descriptors published by the IAQM.

- at receptor 8 (Mill West), the applicant predicts within their ES chapter addendum a process contribution of 0.09 µg/m^3 (this has been obtained using the AERMOD modelling software and meteorological ('met') data from Leeds Bradford airport). They further predict values of 0.19 µg/m^3 (ADMS, Leeds Bradford met data), 0.2 µg/m^3 (ADMS, Bingley met data), 0.2 µg/m^3 (ADMS, Leeds Bradford met data, variable surface roughness) and 0.2 µg/m^3 (ADMS, Leeds Bradford met data, calm conditions) within their 2019 Additional Air Quality Assessment. It is unclear why the applicant has focussed on results from the AERMOD run, which are lower, without providing justification, especially when the terrain module within the dispersion model appears to have the biggest impact on results. Basing the assessment solely on results from the AERMOD model would also appear contrary to the applicant's own statement in their 2019 Additional Air Quality Assessment (Paragraph F10):

  "Neither model is "better" than the other in terms of their ability to take terrain and topography into account; their algorithms simply provide alternative forecasts. Nevertheless, it could be argued that ADMS has a more sophisticated approach to processing complex terrain, in that it calculates the impacts of terrain on plume spread and allows for the impacts of hill wakes."

  We would agree that ADMS has a more sophisticated treatment of terrain effects, with previous reviews by Carruthers et al. (2011)[7] suggesting that in some situations, because of its less sophisticated treatment of terrain, AERMOD may only "*act as a screening model in this case, whereas ADMS may predict more realistic concentrations*".

- as three of the five modelled scenarios by the applicant results in an increase of 0.2 µg/m^3, coupled with the uncertainty regarding the baseline concentration within the AQMA, using impact descriptor tables within the IAQM planning guidance, it is judged that a *slight adverse* impact is feasible.

6 2020 data was not available at the time of writing and could not be used as representative air quality conditions due to the impacts of the Covid-19 pandemic.

7 Carruthers, D.J., Seaton, M.D., McHugh, C.A., Sheng. X., Solazzo, E and Vanvyve, E., (2011). *Comparison of the Complex Terrain Algorithms Incorporated into Two Commonly Used Local-Scale Air Pollution Dispersion Models (ADMS and AERMOD) using a Hybrid Model*. Journal of the Air & Waste Management Association, 61, 1227-1235

Benzo(a)pyrene

3.14 Within the 2019 additional air quality assessment, the applicant predicts a 'worst-case' Benzo(a)pyrene (B(a)P) process contribution (PC), i.e., that relating to emissions from the SWIP processes in isolation, of 9% of the Air Quality Standard (AQS), and predicted environmental concentration (PEC) of 98.4%, i.e., the SWIP process contribution plus contributions from other emission sources. This level of impact is presented at the location of maximum impact anywhere on the modelled grid.

3.15 This prediction is based on an emission concentration of 1 µg/m^3 derived from typical emissions data of B(a)P in the 2006 Waste Incineration BAT Reference (BREF) document. In December 2019, an update to the 2006 BREF was introduced that confirmed B(a)P emissions from 48 reference lines incinerating predominantly municipal wastes ranged from 0.004 ng/Nm^3 to 1 µg/m^3. In that respect, the assumed emission concentration for B(a)P can be viewed as precautionary. However, in combination with the previous discussion on model uncertainty, as the PEC approaches 100% and no evidence is presented about level of significance of this level of impact, it is not considered possible to definitively conclude no significant effects based on the data presented. In particular, the average B(a)P concentration at the Leeds Millshaw monitoring site between 2014 and 2017 has been used to define baseline concentrations, rather than the maximum. The maximum annual mean concentration during this period exceeds the objective.

3.16 However, it is important to recognise that this prediction is made based on the maximum predicted value at any location in the model domain. AQS apply only where there is 'relevant exposure' and, for the purpose of assessing compliance with the B(a)P objective, which is expressed as an annual mean assessment metric, relevant exposure only occurs at e.g., residential properties and schools. It is expected that model predictions at the specific human receptors considered in the assessment would be lower than the maximum predicted value, and could possibly be at a level where no significant effect could be concluded. However, this should be confirmed by the applicant by providing tabulated data for each specified receptor location where there is relevant exposure.

Stack Height Determination

3.17 Appendix D of the 2019 Additional Air Quality Assessment details how the requirement for a 12 m stack was determined. However, this analysis (in Graph D1) shows that the air quality impacts would be appreciably smaller if a taller stack were chosen, even when the stack is increased by just a few metres. A cursory examination of these graphs shows that 12 m does not represent a point at which further height increases have diminishing returns in terms of reduction in the predicted ground level concentration. In practice, the justification for a 12 m stack appears to be that most impacts can, with this stack height, be described as '*negligible*'. However, as identified previously, there are valid reasons to suggest impacts could be greater than negligible.

3.18 The Environment Agency has produced internal draft stack height assessment guidance with a particular emphasis on incineration plants[8]. This guidance has previously been provided by the Environment Agency to the reviewers as an example of a methodology it would accept for determining the minimum required stack height for incineration plants.

3.19 The guidance clarifies that the stack height, according with the principles of Best Available Technique (BAT), can be defined as the 'knee-point' of a graph plotting the reduction in process contribution as a function of increasing stack height (the method actually uses stack costs, but stack height is often used as a proxy for cost). Figure 1 provides an example figure depicting the knee-point (blue arrow) from this guidance document.

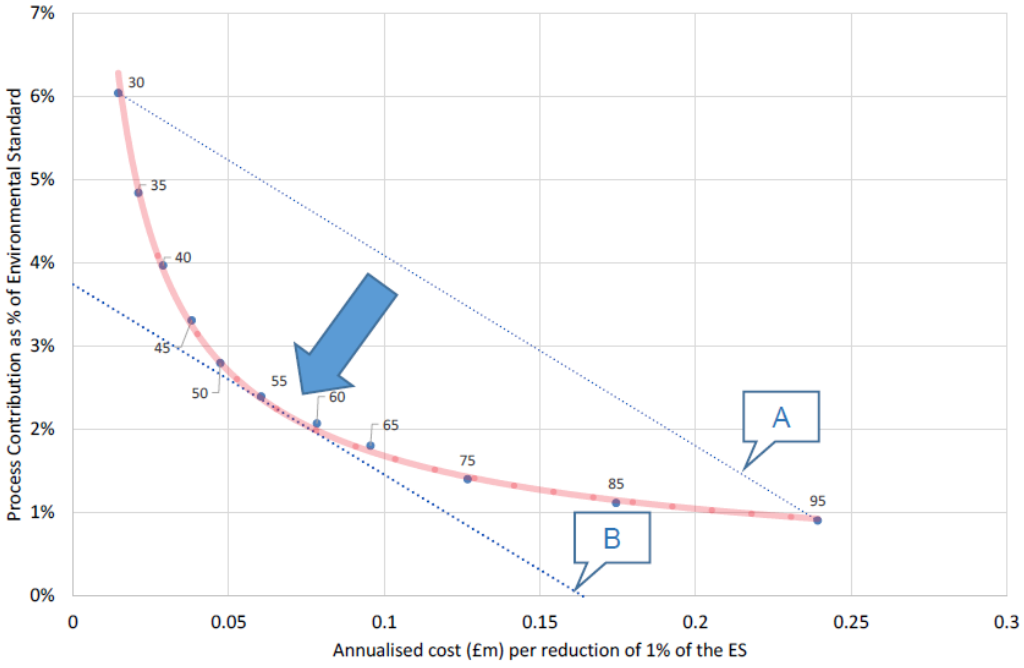

Figure 1: Visual depiction of the 'knee-point' on a stack height assessment graph

3.20 The Environment Agency guidance clarifies that where an impact is defined as 'insignificant' for a particular stack height, i.e., where long-term process contributions are less than 1% of the relevant AQS, or where short-term process contributions are less than 10% of the AQS, further increases in stack height are not necessary as it follows that any further reduction in impact will also be insignificant.

3.21 Hence, it is possible for the BAT stack height to occur before the knee-point. Where this is the case, the shorter stack height would be considered BAT. For this particular plant, it is evident that the selected stack height of 12 m occurs before the knee-point. However, process contributions at 12 m

[8] Environment Agency, 2017. EPR Permit – Stack Height Assessment. Environment Agency Internal Guidance (draft) V0.5 November 2017

for several pollutants cannot be defined as insignificant[9]. Consequently, the applicant has failed to demonstrate that a stack height corresponding to the principle of BAT[10] has been selected, and further justification should be provided.

Ecological impacts

3.22 The applicant has not assessed the impacts at nearby ancient woodland and local nature reserve ecological sites within their ES addendum or their 2019 additional Air Quality Assessment. These sites are within the 2 km screening distance for assessment of ecological sites required by the Environment Agency. This assessment has been undertaken for the original 2017 ES chapter; however, this assessment is not considered fully robust as it is not clear if ammonia and hydrogen fluoride emissions have been accounted for when considering the impacts of nutrient nitrogen and acid deposition.

Roads Modelling Verification and Model Adjustment

3.23 We are satisfied that the applicant's use of 28 µg/m^3 as a background NO_2 concentration is likely to be appropriate due to its location within the study area and its designation as an urban background site. The applicant has further undertaken roads modelling to determine the local baseline exposure at each chosen receptor.

3.24 In accordance with best practice guidance, the applicant has sought to verify the predictions from its road traffic emissions model by comparison with monitoring data. The applicant has applied a correction factor of 1.0704 to their modelled road-NOx concentration before converting to NO_2. Examination of the applicant's verification analysis has shown the model to underpredict at monitoring sites SB20 and SB22 (which are located approximately 35 m from Receptor 8) and overpredict at monitoring sites SB3 and AQS4 (which are located nearly 450 m from Receptor 8). Given that Receptor 8 is close to the unpredicting sites, and is registering at or above the objective (depending on the year chosen), the methodology for the model verification, and approach to calculating the correction factor, may not be suitably precautionary.

3.25 Given the issues previously discussed with respect to model uncertainty and the proximity of the predicted impacts to the annual mean NO_2 objective, it is deemed more appropriate to use a location-specific model adjustment factor for receptors within or in close proximity to the AQMA. This is because monitoring sites SB20 and SB22 clearly provide a better representation of air quality conditions where NO_2 concentrations of 0.2 µg/m^3 (0.5%) are predicted. The effect of this would be

[9] This refers to the Environment Agency criteria for insignificance (stated within their online guidance page: https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit), which is used within internal EA guidance documents to assist in the determination of stack height suitability.

[10] Refers to the principle of BAT rather than any specific BAT conclusions (BATc) contained with the BREF documents, which only apply to Part A1 installations, or other BAT requirements in Process Guidance Notes which only apply to Part B installations.

to increase model predictions within and in close proximity to the AQMA. This might, in turn, result in a different classification of impact descriptors as previously discussed.

Assessment of 1-hour mean NO_2 Concentrations

3.26 Annex VI of the Industrial Emissions Directive (IED) provides two sets of emission limit values applicable to waste incineration plant (including SWIP). These are defined as a daily average emission limit and a 100th percentile 30-minute mean emission limit. For emissions of NO_x, the daily average emission limit is 200 mg/Nm^3 and the 30-minute mean emission limit is 400 mg/Nm^3. Both sets of limits were included in the permit that was initially granted for the plant.

3.27 The applicant has not undertaken an assessment against the short-term NO_2 objective using the half-hourly emissions limit within IED and the permit. Rather, the daily average emission concentration has been used for assessing hourly mean impacts. As the plant is permitted to discharge NO_x at levels up to 400 mg/Nm^3 for a period of 30-minutes, there is the potential for hourly averaged emission concentrations to exceed the daily averaged emission limit that has been modelled leading to potential underestimation of hourly mean impacts.

3.28 Similar findings are concluded with respect to e.g., the approach to assessing short-term SO_2 impacts.

Human Health Risk Assessment for Persistent Organic Pollutants

3.29 Dioxins and dioxin-like PCBs are a class of compounds known as Persistent Organic Pollutants (POPs). Whilst generally present at low levels in environmental media i.e., in air, water and soil, due to their persistence in the environment and bioaccumulative nature i.e., the rate of intake of these compounds by an organism exceeds the rate of excretion, dioxins and dioxin-like PCBs can become concentrated in the food chain, particularly in fatty foods such as milk and milk products, and in certain meats and fish.

3.30 As the majority of human exposure to this group of compounds is through ingestion, rather than inhalation, no air quality standards or other ambient air quality guidelines exist. Consequently, it is generally a requirement that any installation discharging these compounds undertake a human health risk assessment (HHRA) that considers exposure through all pathways, i.e., through both inhalation and ingestion, to estimate the total bodily uptake of dioxin and dioxin-like PCBs as a result of installation activities, and compare such predictions against the tolerable daily intake (TDI) established by the Food Standards Agency's Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) and the tolerable weekly intake (TWI) established by the European Food Standards Agency.

3.31 No HHRA for dioxins and furans and PCBs has been undertaken. Such an assessment addresses impacts relating to bioaccumulation in the food chain for pollutants which cannot be adequately assessed by referring to ambient air quality standards.

3.32 In practice, the methods available for such an assessment are relatively crude and thus tend to be over-precautionary, but the results can still provide reassurance as to the scale of impacts. The experience of the reviewers, consistent with research and the latest position of Public Health England, is that waste incineration plant meeting the IED emission limits and with an appropriately optimised stack height, only provide negligible contributions to the TDI and the more precautionary TWI. However, in this case, due to the potential issues identified with the justification of the selected stack height, a HHRA should not just be viewed as a procedural exercise.

Minor Issues

Carbon Monoxide 1-hour EAL

3.33 The applicant has not undertaken an assessment against the Carbon Monoxide (CO) 1-hour Environmental Assessment Level (EAL) of 30,000 µg/m^3. In the experience of the reviewers, carbon monoxide emissions are generally insignificant compared to the environmental standards. As there are no predicted significant effects towards the 8-hour CO objective, lack of consideration of the 1-hour EAL is unlikely to alter the conclusion of the assessment.

TOC Emissions

3.34 The applicant has not undertaken an assessment of the likely emissions of total organic compounds (TOC). It is a requirement within chapter IV of IED that emissions to air from waste incineration plants shall not exceed the emission limit value of 10 mg/Nm^3 for TOC; therefore, any robust assessment should consider the sites impact from TOC.

3.35 As the exact speciation, or composition, of TOC cannot be known, best practice guidance by the Environment Agency suggests comparing TOC impacts against the benzene AQS. Such an assessment was undertaken within the original 2017 ES chapter in respect to the annual mean benzene AQS. The Environment Agency has recently introduced a 24-hour mean benzene environmental assessment level (EAL) of 30 µg/m^3 which should be assessed against for completeness. However, it is accepted that the air quality assessment was produced before the publication of this new EAL.

Surface Roughness

3.36 It is unclear why the applicant has chosen to use such a high surface roughness value within its sensitivity analysis. The applicant has used a value of 1.0 m (which the ADMS user guide suggests represents cities and woodlands) within their main modelling run. As there is an area of woodland surrounding the site, this is deemed suitable. It is unclear why the applicant, within their sensitivity analysis, has created a variable surface roughness file and used a value of 1.5 m (which the ADMS user guide suggests represents large urban areas) for the nearby woodland. In conjunction with using a value of 1.0 m for the rest of the modelling domain, where the majority of the land is judged

representative of a suburban area/small town, where a value of 0.5 m is deemed more appropriate, this has the potential to over represent the turbulence effects in the area.

4 Review of the Environmental Permit and Application

Scope of the Review

4.1 The review of the Environmental Permit and associated application documentation has been performed based on the review team's experience of delivering permit applications for similar facilities and taking into account guidance produced by Defra and the Environment Agency. However, where aspects relate to the interpretation of legislation, the opinion of a legal professional is recommended. AQC does not have the experience or capability to comment on matters concerning legal interpretation.

Summary

4.2 Following a review of the documents supporting the permit application for the SWIP installation, and the Environmental Permit itself, several areas have been identified that introduce uncertainty with respect to the ability of the plant and/or of the Operator to comply in full with the requirements of Chapter IV of the IED. However, it is expected that such issues could be resolved with further requests for information, rather than a fundamental inability of the plant to meet the requirements of IED and of the permit. **Despite this, it is a requirement that all information required to determine an application is provided and the permitting authorities should not determine an application until they are satisfied they have received all relevant information. Consequently, this additional information should have been requested to provide confidence that these conditions can be met and, on that basis, we are in agreement that the first Ground for Challenge is robust**.

4.3 In respect to the fourth Ground for Challenge, a view on this is complicated by the uncertainty in the extents of the installation boundaries for the SWIP permit and the separate waste operations permit. This uncertainty results from the poor image definition of the boundary in the respective installation boundary figures. From review of the introductory note in the Environmental Permit for the other on-site waste operations and surrender notice, it is clear the intent was to remove (partial surrender) only the area associated with the SWIP installation. However, it does appear that there is a small area of land not covered by either permit. We suspect this has arisen through accidental omission, or poor definition of the images, rather than intent, and better quality images could resolve such matters.

4.4 Potential procedural issues have been identified relating to the transport of Air Pollution Control residues through the installation boundary of the adjacent waste transfer station and whether this conveys a degree of acceptance. If such an action did imply acceptance, the waste transfer station would be operating outside of the conditions of its permit, which only allows the acceptance of non-hazardous waste. This is an area where it is strongly advised legal opinion is sought before deciding whether to pursue this as a matter for further consideration.

Permitting Context

4.5 Incineration plants accepting non-hazardous waste and incinerating that waste at a rate less than 3 tonnes per hour are regulated under Schedule 13 of the EPR as SWIP. This requires the plant to comply with certain requirements of IED, including the Chapter IV Special Provisions for Waste Incineration Plants and Waste Co-Incineration Plants[11] and, unless excluded under Article 44, hold a permit to operate that reflects these requirements. As clarified in the Environment Agency's *Environmental permitting guidance: waste incineration*, permits for SWIP are issued by the local authority.

4.6 SWIP are not required to meet the Best Available Technique Conclusions (BATc) for waste incineration as defined by the European Commission; these only apply to incineration plant incinerating waste at a rate greater than 3 tonnes per hour. Additionally, unless the SWIP also meets the definition of a 'Part B' process under Schedule 1, Section 5.1 of the EPR, it does not need to meet the BAT requirements in Defra's Process Guidance Notes. The SWIP at this installation does not meet the definition of a Part B listed activity and, consequently, BAT requirements do not apply.

4.7 It is possible for a permit to cover more than one regulated facility. However, Defra's *Environmental Permitting: Core Guidance* explains this is generally only possible where the regulator is the same for each facility, the operator is the same for each facility, and all the facilities are on the same site. In that sense, the guidance explains that a single environmental permit cannot cover regulated facilities with different regulators, i.e., a single permit cannot generally be granted that covers activities usually regulated separately by the Environment Agency and the local authority.

4.8 However, the guidance also explains that powers are available by an appropriate authority under Regulation 33 of the EPR to direct an Agency or the local authority to assume the functions of the other if this leads to simpler regulation. Where this direction does occur, the aim is to allocate responsibility to the Regulator of the major activity on-site.

4.9 There is no formal guidance that defines the extents of a Schedule 13 SWIP process. The limits of the specified activity are generally taken to be consistent with those defined in permits for larger waste incineration installations e.g., operation of the furnace, boilers and auxiliary burners; facilities for the treatment of exhaust gases; facilities for the receipt, storage and handling of incoming wastes and raw materials (including fuels); facilities for the storage and disposal of surface water and waste process water; facilities for the storage of residues pending off-site disposal/recovery; and facilities for the generation of electricity to be consumed on-site or exported to the Grid.

[11] With the exception of some sub-articles relating to provisions for the categories of waste to be included in the permit which can be co-incinerated in certain categories of waste co-incineration plants, requirements for continuous monitoring of dioxins and heavy metals, and certain communications to the Commission.

Implications of Multiple Permits on the Same Site

4.10 The proposed CVSH site consists of an existing household, commercial and industrial waste transfer station (WTS), including treatment, and the proposed Schedule 13 SWIP. The waste operations in the WTS are regulated by the Environment Agency under Environmental Permit EPR/SP3196ZQ, whilst the operations of the SWIP were to be regulated by CMBC under Environmental Permit S13/005.

4.11 As identified in paragraph 4.7, whilst it is possible for a single permit to cover more than one regulated facility, this is generally not the case where the permit would cover regulated facilities with different regulators unless the Secretary of State confers powers on one regulator to assume the responsibilities of the other. In Defra's *General Guidance Manual on Policy Procedures for A2 and B Installations*, it additionally states:

"*Where several activities from different Parts of Schedule 1 are carried out in or as part of the same installation, the installation will be permitted according to what can be described as the "highest common denominator" (Schedule 1, Part 1, paragraph 2 to the EP regulations). So if Part A1, A2 and B activities were carried out at an installation, it would be permitted as an A1 installation and therefore by the Environment Agency*."

4.12 Like Schedule 13 SWIP facilities, Part B installations are regulated by local authorities. The above guidance suggests it is possible in some circumstances for the Environment Agency to assume the responsibility for regulating installations from the local authority. However, neither the WTS, nor the SWIP are a Part A1, A2 or B installation.

4.13 In that respect, it is not entirely unusual that multiple permits exist with different regulators on the same site.

4.14 In terms of the interlinked nature between the two permits and the ability of each to control operations across the site as a whole, it is necessary first to define the boundary and type of operations covered by each regulated facility.

4.15 The SWIP takes pre-sorted RDF from the WTS. This pre-sorting is a physical treatment activity and the provisions for this activity are covered by Table S1.1 of the WTS environmental permit (*physical treatment including manual and mechanical sorting/separation, screening, shredding, crushing, compaction or drying of non-hazardous waste for disposal (no more than 50 tonnes per day) or recovery*). Temporary storage of the RDF is also accounted for by the R13 and D15 description in Table S1.1 (dependent on whether the RDF is sent for disposal or recovery).

4.16 The SWIP permit limits the type of waste that can be accepted within the SWIP installation to RDF (EWC waste code 19 12 10) and further details that only RDF from the adjacent WTS is to be accepted. Whilst it is clear that the SWIP could not operate without the WTS under these restrictions, there is no requirement from the permitting perspective for the SWIP permit to cover procedures for

the acceptance, storage and treatment of the incoming household, commercial and industrial waste to the wider site as these provisions are already made in another operating permit. To introduce such controls in the SWIP permit would lead to double regulation. This is no different in practice to a standalone SWIP taking RDF from an off-site facility, i.e., the SWIP would not be expected to introduce controls that lead to the formulation of RDF at another off-site facility. From the perspective of the SWIP permit, the incoming waste is the RDF, not the household, commercial and industrial waste.

4.17 There is a similar argument to make for the handling of bottom ash residues from the SWIP if the WTS was to temporarily store bottom ash. Condition 6.1 of the SWIP permit requires that, where appropriate, residues are recycled, directly in the plant or outside. The WTS effectively acts as an interim storage facility for ash residues prior to recycling. The WTS permit allows the acceptance of bottom ash through the inclusion of EWC code 19 01 12 in its permit and temporary storage of bottom ash pending off-site recycling would be covered by the R13 description in Table S1.1.

4.18 There is precedent for this permitting approach at larger integrated waste management facilities in the UK where, within the same wider site, a WTS provides pre-sorted/treated waste to an incineration plant, and the WTS handles ash residues from the incineration plant, but with the WTS and incineration plant operating under different permits. The one differentiating factor in these instances is that the incineration plant is much larger, so regulated as a Part A1 installation by the Environment Agency i.e., there is a common regulator.

4.19 However, one potential complicating factor of the proposed permitting arrangement at the site relates to the transport of Air Pollution Control residues (APCr). APCr are classed as hazardous waste principally due to their high pH content. The WTS permit does not allow the acceptance of hazardous waste. However, due to the way that the permit boundaries are defined, APCr must be transported through the WTS permitted installation boundary before it leaves the wider site. It is unclear whether the transportation of APCr through the WTS installation boundary would convey a degree of ‘acceptance’, or whether this would simply be considered the same as APCr transport on the wider road network. If this was to constitute ‘acceptance’, then the WTS would be operating outwith the conditions of its permit. In any case, it would have been advisable for the Accident Management Plan for the WTS to be updated to reflect that there is the potential for hazardous waste to pass through its installation boundary.

4.20 The above issue, and indeed many of the issues raised in this section, are procedural. Consequently, such matters are best judged by a legal professional.

Installation Boundaries

4.21 It does appear from initial inspection of the respective installation boundary figures that there could be a small area of land not covered by either permit. However, such an analysis is complicated by the quality/resolution of the images that depict the respective installation boundaries, the different

base mapping used and the absence of a scale on the installation boundary in the SWIP permit. As such, it is difficult to identify the potential implications.

4.22 From review of the introductory note in the Environmental Permit for the WTS permit and surrender notice, it is clear the intent was to remove (partial surrender) only the area associated with the SWIP installation from the existing WTS permit. We suspect any apparent area of unregulated land has arisen through accidental omission/interpretation of the figures, rather than specific intent, and better quality images or revised plans could resolve such matters.

Further information requirements

4.23 The following aspects represent additional information which, in the opinion of AQC based on its experience preparing permit applications for similar facilities, should have been provided to enable CMBC to be able to robustly determine the permit application. **Without this information, or without the requirement to supply this information in a pre-operational condition, the permit should not have been determined.**

Waste Acceptance

4.24 Article 52(1) of IED requires Operators of incineration plant to "*take all necessary precautions concerning the delivery and reception of waste in order to prevent or to limit as far as practicable the pollution of air, soil, surface water and groundwater as well as other negative effects on the environment, odours and noise, and direct risks to human health*."

4.25 RDF produced from the adjacent WTS will be delivered to the SWIP building using a front loader and loaded directly into the hopper of the SWIP or temporarily stored within a bunker in the SWIP building. However, other than a general reference to storing materials on a concrete floor that will be maintained, no detailed information has been provided of the measures to prevent loss of containment from the waste bunker and consequent fugitive discharges to land and groundwater. For example, the British Standard to which concrete would be constructed and its tightness class has not been specified. These details are typically requested by the Environment Agency when determining applications for Part A1 waste incineration plant.

4.26 Additionally, no details are provided on any waste acceptance procedures to confirm that the waste received within the SWIP installation boundary is compliant with the conditions of the permit. Whilst the potential risk of receiving non-compliant or off-specification waste will be minimised from the pre-sorting in the WTS, the potential risk of non-compliant wastes entering the SWIP installation boundary cannot be totally discounted. Loading waste directly into the hopper minimises the potential for non-compliant wastes to be identified and removed. Without acceptance measures in place at the SWIP, the SWIP is effectively outsourcing its responsibilities for waste acceptance to the WTS, but the WTS is not covered by this article of IED.

4.27 No details are provided for the location and design measures for a quarantine area for temporarily storing non-compliant waste. Additionally, no details are provided as to how waste arriving at the SWIP will be weighed to ensure it remains compliant with the permitted annual waste throughput, and that the feed rate does not exceed two tonnes per hour. There is, however, a condition in the permit that requires the mass of each type of waste to be determined prior to accepting the waste on-site. If the incoming waste was not weighed, the Operator would be non-compliant with the conditions of the permit and could be subject to enforcement action.

Operational Envelope and Validation of Combustion Conditions

4.28 Natural variation in the composition of waste, in particular its calorific value (CV), can affect the ability of an incineration plant to control combustion. All incinerators have an operational envelope defined by the calorific value of the waste and the waste throughput. In practice, the safe operation of incinerators, particularly those recovering energy, is governed by the thermal input, which is a product of the CV and waste throughput. When the CV is low, it is possible for a higher amount of waste throughput. Conversely, when the CV is high, the waste throughput has to be restricted to maintain a constant thermal input.

4.29 It is common to provide a firing diagram with an application for an incineration plant that identifies the calorific value and waste throughput range over which stable combustion conditions can be maintained. Although RDF is a relatively homogeneous waste stream, certainly compared to municipal waste, natural variations in CV will occur due to the variation in the fractional composition of individual components making up the RDF. No firing diagram has been provided with the application, nor has any information been provided to demonstrate that the plant can operate within the expected range of variation in RDF CV.

4.30 Information on the typical composition of RDF from various literature sources are cited in the Schedule 5 response. This information would have been a suitable proxy if the plant was accepting RDF from a variety of sources. However, the SWIP is limited to accepting RDF produced exclusively in the WTS. As such, it would have been appropriate to request that further information be provided on the composition of RDF obtained from the CVSH WTS, rather than relying on literature values.

4.31 Article 50(2) of IED requires that incineration plants "*…shall be designed, equipped, built and operated in such a way that the gas resulting from the incineration of waste is raised, after the last injection of combustion air, in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C for at least two seconds*". The applicant has provided an email which displays the output of a Computational Fluid Dynamics (CFD) model that demonstrates this condition is just met for the specific SWIP to be installed (minimum 2.03 s residence time).

4.32 However, other than an image providing the fluid trajectories and temperature, the email provides no information on the specific method used to develop these calculations, nor does it clarify under

which operating conditions, in terms of waste throughput and CV, the predictions are valid for. There can be no certainty, based on the information provided, that the CFD modelling has been based on the most unfavourable conditions under which the SWIP can operate.

4.33 There is a condition (Condition 5.8) that requires the Operator to verify the minimum residence time and temperature requirements using actual measurements within one month of the plant being commissioned. However, the purpose of providing theoretical calculations of these parameters at permit application stage is to demonstrate the plant at least has the ***potential*** of meeting the minimum requirements of Article 50(2).

Accidents and Incidents

4.34 Article 46(5) of IED requires that incineration plant should be designed to prevent the unauthorised and accidental release of any polluting substances into soil, surface water and groundwater. Accidents and incidents are discussed very briefly in Section 5.4 of the permit application. Section 5.4.3 states that an Accident Management Plan has been developed as part of the Environmental Management System for the existing WTS and this will be updated to include aspects associated with the operation of the SWIP. However, beyond that, no details are provided of the potential accident scenarios associated with the operation of the SWIP and an assessment of their environmental risk, nor is there any pre-operational condition that would require the Operator to make available inspection of the updated procedures prior to commissioning of the facility.

4.35 Condition 7.1(2) of the permit requires the Operator to take steps set out in the document 'Accident Management Plan' to limit the environmental consequences and to prevent further accidents or incidents. However, based on information provided to AQC, an update to the Accident Management Plan does not appear to have taken place. As the Competent Authority for Schedule 13 SWIP, it is incumbent of CMBC to review such procedures prior to waste being accepted within the SWIP installation boundary. Risks associated with the current operation of the WTS are materially different to those associated with the operation of the SWIP, and the existing Accident Management Plan cannot be relied upon to adequately mitigate the risks of accidents associated with the SWIP.

4.36 Furthermore, no information has been provided on any fire detection and suppression systems installed within the SWIP building, nor has a formal Fire Prevention Plan (FPP) been produced. The Environment Agency's *Fire prevention plans: environmental permits* guidance clarifies that its Fire Prevention Plan guidance "… *applies to operators that accept **any** amount of combustible waste*." (emphasis added). Paragraph 2.1.6 in the Schedule 5 response seems to suggest the Operator will rely on the FPP established for the existing WTS for controlling fires at the SWIP. However, this FPP is not considered valid for the SWIP as, whilst it refers to combustible RDF, the SWIP introduces e.g., new potential ignition sources, new operations, and does not explicitly define how fires will be controlled within the SWIP building in response to the change of operations. It would have been advisable that a bespoke FPP for the SWIP was produced.

4.37 Provision of an adequate FPP is not necessarily a minimum requirement for determining a permit application, particularly where a design is still in development. However, where a FPP is not provided with the application, there should at least be a pre-operational condition in place that requires a FPP to be provided for inspection prior to waste being accepted within the installation boundary.

Fugitive Emissions to Land and Groundwater

4.38 As identified above, IED requires the Operator implement measures to prevent the unauthorised release of polluting substances to land and groundwater. In addition to the incoming waste and residues, other polluting substances stored within the SWIP installation boundary include urea for NO_x control and gas oil for start-up and temperature safeguarding.

4.39 No information has been provided in the application of measures in place to contain leaks, spillages or catastrophic failure of the urea and gas oil storage tanks. Consequently, the potential risk of fugitive emissions to land and groundwater is unquantified.

4.40 Best practice guidance for containment systems for the prevention of pollution are described in CIRIA C736. No reference is made in the application to this guidance, or indeed to any other best practice guidance for containment systems to prevent fugitive emissions to land and groundwater.