

# Medworth Energy from Waste Combined Heat and Power Facility



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## Environmental Statement

## Appendix 8A: Stakeholder engagement and consultation comments on Air Quality

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# 1. Introduction

1.1.1 A summary of the relevant responses received to the PIER in relation to air quality, and confirmation of how these have been considered within the assessment to date is presented in **Table 8A.1 Summary of PEIR responses for air quality**.

**Table 8A.1 Summary of PEIR responses for air quality**

Consultee	Issue raised	Response
<b>Cambridgeshire County Council</b>	Contributions of emissions of HCl should also be considered in relation to acid deposition to designated ecological sites.	HCl has been included in the calculation of acid deposition.
<b>Cambridgeshire County Council</b>	It is stated that, “With regard to internationally designated biodiversity sites, namely Nene Washes and Ouse Washes SPA, SAC and Ramsar for this assessment and in line with the EA guidance, effects may be screened out as insignificant and do not require further assessment if the long-term PC is less than 1%, or the short-term PC is less than 10%, of the Air Quality Assessment Level (AQAL).” High Court judgements have made clear that these impacts should be considered both in isolation and in-combination with other relevant plans and projects before the above criteria are applied. This applies to small projects, as well as those subject to Habitats Risk Assessment.	The assessment has considered local plans allocation as part of the future baseline traffic data. Regarding combustion emissions from relevant projects and plans, no relevant proposals were identified in the vicinity of the Proposed Development.
<b>Cambridgeshire County Council</b>	Due to limitations on traffic data collection during the 2020/21, only a fairly small network of roads has been included in the air quality model. For the ES, all roads within 200m of Receptors should be included in the road traffic model to ensure that total predicted environmental concentrations are representative of actual conditions.	A larger road network was modelled in this assessment based on traffic counts undertaken in 2021. As impacts are at their highest closer to a road being assessed, Receptors representing the worst-case location were selected. Regarding the extend of the modelled road network, the assessment considered affected roads, defined as road links that experience an increase in traffic, as a result of the Proposed Development, above the indicative screening criteria defined in the IAQM/EPUK guidance on air quality and planning. These screening criteria are more stringent for road links within AQMA to ensure that worst-case predicted environmental concentrations are considered.



Consultee	Issue raised	Response
Cambridgeshire County Council	Long-term monitoring sites operated by Fenland District Council (S5, S8, S15, S17 and S20) were used to verify the results of the road traffic model. These monitoring sites are all within the currently modelled road network. For the ES, consideration should be given to the inclusion of monitoring sites alongside the wider network and those included in the project specific monitoring survey.	The model was re-verified using data from the project specific monitoring survey.
Cambridgeshire County Council	<b>Appendix 8B (Volume 6.4)</b> states, "The table below shows the comparison of the modelled NO <sub>2</sub> concentration calculated by multiplying the modelled road NO <sub>x</sub> by the adjustment factor of 1.50 and using the LAQM's NO <sub>x</sub> to NO <sub>2</sub> conversion tool to calculate the total adjusted modelled NO <sub>2</sub> . Modelled NO <sub>2</sub> and PM <sub>10</sub> concentrations have been adjusted using this adjustment factor." It is not clear how the factor of 1.50 was derived.	Full details on the verification method are presented in <b>Appendix 8B Air Quality Technical Report (Volume 6.4)</b> . The model was re-verified using data from the project specific monitoring survey. A factor of 2.27 was determined.
Cambridgeshire County Council	Traffic input data presented in Table 8B.5 suggests that AADT and %HDV data have been input to the model. The Defra Emission Factor Toolkit (EFT) used to calculate emissions includes buses and coaches within the definition of HDV. Therefore, care should be taken to ensure that all additional HDV traffic is modelled as HGV, otherwise the model results will effectively suggest that some of the waste is transported by buses, which have different emissions characteristics.	Full details on traffic data inputs are presented in <b>Appendix 8B: Air Quality Technical Report (Volume 6.4)</b> .
Cambridgeshire County Council	Air Quality Assessment Levels (AQALs): It would be helpful to provide justification for each of the AQALs used in the assessment. For example, Tables 8.28 and 8.29 indicate that an AQAL of 200 µg/m <sup>3</sup> has been used for daily mean NO <sub>x</sub> concentrations in relation to designated ecological sites. This value is higher than the objective of 75 µg/m <sup>3</sup> and no justification is provided for the use of this higher threshold.	The 200µg/m <sup>3</sup> were used instead of the 75µg/m <sup>3</sup> objective after consideration of the existing concentrations of SO <sub>2</sub> and ozone (O <sub>3</sub> ). An approach applied in many projects and accepted by the EA in previous assessments. The critical level of 75µg/m <sup>3</sup> daily mean NO <sub>x</sub> has been derived from WHO guidance, which suggests a level of 75 µg/m <sup>3</sup> where O <sub>3</sub> and SO <sub>2</sub> are present above their critical levels. As a result, a review of SO <sub>2</sub> and O <sub>3</sub> was undertaken, confirming concentrations of both are comfortably below their respective critical levels at the habitat sites



Consultee	Issue raised	Response
		in question. Therefore 200 µg/m <sup>3</sup> is the appropriate value for the daily NO <sub>x</sub> critical level.
<b>Cambridgeshire County Council</b>	Table 8.6 presents nitrogen dioxide (NO <sub>2</sub> ) diffusion tube monitoring data collected between October 2020 and March 2021. It is recommended that any data collected during Covid-19 restrictions should be adjusted to account for 'normal' conditions e.g. a 2019 equivalent calculated using the approach set out by Defra in LAQM Technical Guidance. Where available, 2019 data should be used in preference to 2020 or 2021 data due to the influence of Covid-19 restrictions. Initial monitoring indicates that the background NO <sub>2</sub> concentrations assumed in the modelling are too low. The background concentrations should therefore be reviewed for the ES.	The monitoring survey data was reviewed, and baseline was updated. The assessment has utilised the 2021 monitoring survey data in their verification exercise. A report by AQC, 'Trends in UK NO <sub>x</sub> and NO <sub>2</sub> Concentrations through the COVID-19 Pandemic: January 2022', reported that since autumn 2020 traffic flows have either matched or exceeded those seen prior to the pandemic, particularly for goods vehicles. The average NO <sub>x</sub> and NO <sub>2</sub> concentrations measured since autumn 2020 appear relatively low, driven most likely by longer-term changes to emissions, including turnover of the vehicle fleet, which have continued during the pandemic. The report concluded that it seems unlikely that these levels will be exceeded in the near future regardless of the resumption, or otherwise, of historic travel patterns. Therefore, the assessment has utilised an appropriate baseline.
<b>Cambridgeshire County Council</b>	Figure 8.3 shows the AQMAs in Wisbech. However, the three AQMAs are not labelled and it is not possible to distinguish the boundary of the NO <sub>2</sub> AQMA to be retained from the boundaries of the PM <sub>10</sub> and SO <sub>2</sub> AQMAs that are going to be revoked.	The comment was addressed in the report. Please refer to updated figures.
<b>Cambridgeshire County Council</b>	Stack Height Assessment: The stack height assessment identifies optimum stack heights of 75m and 83m for hourly and annual impacts respectively. It is not clear from Graphics 8B.1 and 8B.2 how these specific values have been derived. Further information should be supplied in the ES.	The comment was addressed in the report. Please refer to <b>Appendix 8B Air Quality Technical Report (Volume 6.4)</b> .
<b>Cambridgeshire County Council</b>	Human Health Receptors The chapter states, "The contribution to the predicted concentrations from the Proposed Development (i.e. the process contribution (PC)) are presented along with the total predicted environmental concentrations	The assessment has been fully updated and the models and results have been audited and are consistent throughout the Chapter and <b>Appendix 8B Air Quality Technical Report (Volume 6.4)</b> .



Consultee	Issue raised	Response
	<p>(PEC), which include the background contribution from sources unrelated to the Proposed Development, where the impact is predicted to be greater than negligible." It is not actually clear whether the PECs presented in Table 8.27 and <b>Appendix 8C (Volume 6.4)</b> include baseline emissions from road traffic. These total PECs (background + roads (all traffic) + stack PC) should be considered in relation to the AQAL. There are a number of discrepancies between the results presented in the summary table (Table 8.27) and the full results presented in <b>Appendix 8C (Volume 6.4)</b>. These include:</p> <ul style="list-style-type: none"> <li>• Annual mean NO<sub>2</sub> - Table 8.27 says maximum PC would be 1.9 µg/m<sup>3</sup> at R107, but Table 8C.1 indicates that the PC is 0.97 µg/m<sup>3</sup>;</li> <li>• 1hr NH<sub>3</sub> - Table 8.27 says maximum PC is 0.1 µg/m<sup>3</sup> at R107, but 8C indicates 9.95 µg/m<sup>3</sup> at R30 and R36m;</li> <li>• 1-hr mean SO<sub>2</sub> – Table 8.27 says 49.3 µg/m<sup>3</sup> at R5 but 8C says 24.25 µg/m<sup>3</sup>. There appears to be an error in 8C as 24.25 µg/m<sup>3</sup> is stated for all Receptors;</li> <li>• Nickel – Table 8.27 states 0% of AQAL but 8C indicates 1%.</li> </ul> <p>All the above issues highlight potential wider errors in the accuracy of the modelling and results presented. All model results presented in the ES should be subject to appropriate QA/QC.</p> <p>Table 8.27 and the associated text also indicates that where the annual mean PC is &gt;5%, that impacts are negligible regardless of the total concentration (PEC). This is not consistent with the IAQM guidance referenced in Table 8.16 (and specifically requested by Cambridgeshire County Council in the EIA Scoping Opinion response), where depending on the baseline concentrations, changes as small as 0.5% of the AQAL may be considered nonnegligible.</p>	
<p><b>Cambridgeshire County Council</b></p>	<p>Ecological Receptors</p> <p>In Tables 8.30 and 8.31, it should be clarified whether the nitrogen deposition rates include inputs from ammonia, and acid deposition includes the HCl contribution.</p> <p>It is stated that, “at internationally designated biodiversity sites. All long-term averages are predicted to be below 1%, and</p>	<p>Acid deposition calculations are inclusive of HCl.</p> <p>The assessment has considered local plans allocation as part of the future baseline traffic data.</p>



Consultee	Issue raised	Response
	<p>short-term averages below 10%, of the critical load. In addition, both nitrogen and acid deposition PC are predicted to contribute less than 1% of the critical load. Therefore, effects to internationally designated biodiversity sites can be screened as insignificant and do not require further consideration.” This conclusion ignores potential in-combination impacts with other plans and projects, which should be considered before the above criteria are applied.</p>	<p>Regarding combustion emissions from relevant projects and plans, no relevant proposals were identified in the vicinity of the Proposed Development.</p>
<p><b>Cambridgeshire County Council</b></p>	<p>Next Steps It is stated that, “The preliminary assessment presented in this chapter is based on information obtained to date. It will be further influenced by responses received during the statutory consultation and following completion of:</p> <ul style="list-style-type: none"> <li>• the air quality monitoring survey;</li> <li>• An assessment of impacts from construction traffic;</li> <li>• An assessment of impacts from operational traffic over the wider study area;</li> <li>• Impacts during abnormal operations (including odour);</li> <li>• Metal deposition; and</li> <li>• Human Health Risk Assessment.”</li> </ul> <p>In addition, the impacts of any diesel generator plant should be considered, as specifically requested by Cambridgeshire County Council and Fenland District Council in consultation on the EIA methodology.</p>	<p>The chimney dispersion model was updated with the final design parameters. The assessment presented in this Chapter, includes all required elements including abnormal operation model, diesel generators model, metal deposition on land and a <b>Human Health Risk Assessment (HHRA, Appendix 8B, Annex G, Volume 6.4)</b>.</p>
<p><b>Cambridgeshire County Council</b></p>	<p>A separate ZTV will be provided for the plume based upon its maximum extent above the stack as interpreted from the Air Quality data. This will facilitate the inclusion of consideration of the plume in the landscape.</p>	<p>A plume visibility was undertaken and the results considered in <b>Chapter 9 Landscape and Visual (Volume 6.2)</b>.</p>
<p><b>Cambridgeshire County Council</b></p>	<p>Table 6.2 The County Council does not support the assessment of potential ‘no’ likely significant effects given that the scheme will result in increase in daily NOx on international designation Receptors (row 2, table 8.26, page 52, Chapter 8 – Air Quality, PEIR) at this stage. The document must be updated to include the results of the Air Quality report.</p>	<p>The results of the assessment presented in full in this chapter. Further information has been incorporated in <b>Chapter 11 Biodiversity (Volume 6.2)</b>.</p>



Consultee	Issue raised	Response	
Cambridgeshire County Council	The County Council is concerned that the scheme may result in negative impact on Nene Washes Ramsar (Paragraphs 11.9.8 and 11.9.11), Nene Washes SPA (Paragraphs 11.9.26 to 11.9.29), Ouse Washes Ramsar site (paragraphs 11.9.61 to 11.9.64) and Ouse Washes SPA (paragraphs 11.9.71 to 11.9.44, Ouse Washes SAC (paragraphs 11.9.78 to 11.9.82) as a result of air pollution. And, that the level of significance of these impacts cannot be ascertained at this stage because the air quality modelling hasn't been taken into account. The report needs to be updated to include air quality results, as discussed above, (see comments under HRA).	The results of the assessment are presented in full in this chapter. Further information has been incorporated in <b>Chapter 11 Biodiversity (Volume 6.2)</b> .	
Fenland Council	District	In relation to air quality, I note the comments submitted by Air Quality Consultants Ltd (AQC) in their July 2021 document entitled "Air Quality Review: Medworth Energy from Waste CHP Facility – Review of Preliminary Environmental Information".	The assessment has been updated since PEIR and addressed all comments from the AQC review.
Fenland Council	District	<p>"normal" operating conditions inherently includes operational processes which would mitigate the risks of any potential dust/odour emissions. These processes are detailed in Chapter 3 of the PEIR - and also 8.6.44 and 8.6.45 – resulting in dust/odour being scoped out of this assessment: the potential for dust/odour emissions would be regulated further through the enforcement of the Environmental Permit mentioned in 8.6.45 – including the submission of an Odour Management Plan, as a requirement of the Environmental Permit: dust/odour will be assessed further in the context of "abnormal" operations</p> <p>In addition to the above, discussions were held with representatives from MVV and Wood Group on 23rd July 2021 - relating to the potential external storage of odorous material. These discussions confirmed that, even in "abnormal" operations, there would be no need to store material outside - as the internal storage capacity is more than sufficient.</p>	Comment noted. The chapter has included a quantitative assessment of abnormal odour emissions as well as an <b>Outline Odour Management Plan (Volume 7.11)</b> detailing the measures to be put in place to manage odour. A final Odour Management Plan will be submitted as part of the Environmental Permit (EP).
Cambridgeshire County Council & Fenland Council	District	Notwithstanding content which might be required by the Environment Agency (or to demonstrate compliance with the relevant technical guidance), it is recommended that	As above





Consultee	Issue raised	Response
	the Odour Management Plan should include: details of the operational/mitigation measures in place during "normal" as well as "abnormal" operating conditions: confirmation that all vehicles delivering/removing material from the site will be sheeted at all times: details of how any complaints received by the operator will be recorded and investigated. Again, this was all discussed with representatives from MVV and Wood Group on 23rd July 2021.	

1.1.2 A summary of the relevant responses received as part of EIA Scoping Opinion in relation to air quality, and confirmation of how these have been considered within the assessment is presented in **Table 8A.2 Summary of EIA Scoping Opinion responses for air quality.**

**Table 8A.2 Summary of EIA Scoping Opinion responses for air quality**

Consultee	Issue raised	Response
<b>The Planning Inspectorate</b>	The Inspectorate agrees that significant effects from the operational Grid Connection are unlikely to occur.	Agreement on scope addressed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2).</b>
<b>The Planning Inspectorate</b>	Uncertainty regarding anticipated construction techniques and the proposed location of Temporary Construction Compound, the Inspectorate considers impact to construction plant (non-road mobile machinery) should be assessed where significant effects are likely to occur.	As detailed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2)</b> specific mitigation measures have been incorporated into the <b>Outline CEMP (Volume 7.12,</b> including best practice measures in maintaining the construction plant (non road mobile machinery) equipment, ensures that potential effects are negligible.
<b>The Planning Inspectorate</b>	Significant effects are unlikely to occur as a result of dust during the operational phase as all waste, incinerator bottom ash and fly ash will be stored in enclosed buildings.	Agreement on scope addressed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2).</b>
<b>The Planning Inspectorate</b>	The Scoping Report details a number of measures to control likely sources of odour during normal operation from waste delivery and short-term storage and explains	Agreement on scope addressed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2).</b>



Consultee	Issue raised	Response
	that an Odour Management Plan would be provided. With these measures in place, the Inspectorate is content that significant odour effects are unlikely to occur and that this matter can be scoped out of the ES. However, the Inspectorate would expect the ES to identify the measures that would be put in place and explain how they are secured.	
<b>The Planning Inspectorate</b>	Effects of climate change on air quality.  The Scoping Report explains that the net effect of these changes on the baseline air quality is difficult to establish, and are unlikely to significantly alter the baseline air quality to an extent that would affect the outcome of any assessment. Furthermore, that changes in technology and the move away from combusting fossil fuels would potentially lead to decreases in emissions and a corresponding decrease in background concentrations of air pollutants in the future. The Inspectorate agrees that this matter can be scoped out of the assessment.	Agreement on scope addressed in <b>Section 8.6 Chapter 8 Air Quality (Volume 6.2)</b> .
<b>The Planning Inspectorate</b>	The Scoping Report applies a 15km study area for impacts from air quality on nature conservation sites. The ES should include a plan that depicts the location of nature conservation sites relative to the Proposed Development, including European sites and Site of Special Scientific Interest.	This has been addressed in <b>Figure 11.2: Statutory and non-statutory designated sites for nature conservation identified within areas of search (Volume 6.3)</b> .
<b>The Planning Inspectorate</b>	The Scoping Report identifies three AQMAs, these should be identified by name on an accompanying plan in the ES. Paragraph 7.4.3 states that Fenland District Council expect to revoke Wisbech AQMAs No 1 (1km north of the main development site) and No 2 (1.7km northeast of the main development site) due to the source of pollution being removed. Unless these AQMAs are revoked, the ES should assess the potential for air quality impacts from the Proposed Development on all three AQMAs. In particular, it is noted that the Wisbech AQMA along Churchill Road is associated with traffic congestion and is a strategic road route into and out of Wisbech. Air quality impacts to the AQMA should be assessed in the ES.	This has been addressed in <b>Section 8.5, Chapter 8 Air Quality (Volume 6.2)</b> and <b>Figure 8.2 (Volume 6.3)</b> .
<b>The Planning Inspectorate</b>	The location of air quality monitoring sites relative to the Proposed Development should be identified on an accompanying plan in the ES.	This has been included in <b>Figure 8.2 Local Authority monitoring locations, to Chapter 8 Air Quality (Volume 6.3)</b> .



Consultee	Issue raised	Response
<b>The Planning Inspectorate</b>	The Scoping Report explains that the ES will assess impacts to both statutory and non-statutory biodiversity sites. Impacts from air quality on individual species should also be considered where significant effects are likely to occur.	This was addressed by suitably qualified ecologists in <b>Chapter 11 Biodiversity (Volume 6.2)</b> .
<b>The Planning Inspectorate</b>	The Scoping Report states that in line with IAQM guidance, Receptors within 350m of dust generating activities will be considered, and a 50m study area will be applied for biodiversity Receptors. The ES should clearly reference the relevant IAQM guidance used. The Applicant should make effort to agree the study area with the relevant consultation bodies.	Agreement on scope addressed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2)</b> . Technical guidance used in this assessment are presented in <b>Section 8.3</b> .
<b>The Planning Inspectorate</b>	The Inspectorate notes the Applicant's intention to undertake an initial chimney height assessment to determine the optimum chimney height. The ES should identify the location and dimensions of the chimney. Should flexibility be required, any limits of deviation should be taken into account in the dispersion modelling and any other relevant assessments for example landscape and visual.	Refer to <b>Appendix 8B Air Quality Technical Report (Volume 6.4)</b> .
<b>Cambridgeshire County Council</b>	Table 7.1: The reference to Policy CS34 of the adopted Cambridgeshire and Peterborough Minerals and Waste Core Strategy is inadequate. This policy requires that waste management development will only be permitted where it can be demonstrated there would be no significant harm to the environment, human health or safety, existing or proposed neighbouring land uses, visual intrusion or loss to residential or other amenities.	Qualitative and quantitative assessment of potential impacts from air emissions, including fugitive emissions, forms part of the scope of the air quality assessment.
<b>Cambridgeshire County Council</b>	Policy 18 of the emerging Cambridgeshire and Peterborough Mineral and Waste Local Plan (Proposed Submission) provides clarification that air quality encompasses factors including 'odour, fumes, dust, smoke or other sources'. All these aspects of air quality need to be considered in the ES.	<b>Chapter 8 Air Quality (Volume 6.2) considers dust at Section 8.9 and odour at Section 8.10.</b>
<b>Cambridgeshire County Council</b>	Owing to the nature of the proposal an air quality assessment must be provided and include the following: <ul style="list-style-type: none"> <li>• Baseline characterisation of local air quality;</li> <li>• Qualitative assessment of air quality impacts from construction activities;</li> <li>• Qualitative assessment of air quality impacts during operational phase of the proposed development using relevant guidance including that published on development control by Environmental Protection UK; and</li> </ul>	Agreed scope addressed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2)</b> .



Consultee	Issue raised	Response
	<ul style="list-style-type: none"> <li>• Recommendation of mitigation measures, where appropriate, to ensure any adverse effects on air quality are acceptable.</li> </ul>	
<b>Cambridgeshire County Council &amp; Fenland District Council</b>	<p>It is noted that there are only limited mentions of traffic and transport within this chapter, whilst it is appreciated that transport is covered within a separate chapter, the transport effects on local air quality must be fully considered. Further consideration needs to be given to the air quality impacts from a transport perspective, particularly given the suggestion that the site will be capable of handling over 500,000 tonnes of residual waste per annum.</p>	<p>A detailed air quality assessment considering traffic impacts forms part of the assessment. The cumulative impact of traffic and chimney emissions on relevant Receptors is presented, as detailed in <b>Section 8.9 (construction) and 8.10 (operation), Chapter 8 Air Quality (Volume 6.2).</b></p>
<b>Cambridgeshire County Council &amp; Fenland District Council</b>	<p>The adjacent industrial site has a number of different Environmental Permitted Sites (regulated by the Environment Agency and Local Authority). The EIA/ES should detail if the incineration process will result in a cumulative impact on air quality. If a cumulative impact is identified, the EIA/ES should detail how the existing permitted processes will be impacted on and any burdens it will place on them.</p>	<p>The assessment considers current emissions from industrial activities through the consideration of appropriate baseline. In addition, cumulative impacts from committed developments are considered within the traffic flows applied to this assessment.</p>
<b>Cambridgeshire County Council</b>	<p>The EIA/ES should consider the impact of the number and type of vehicle movements that the proposed development will have as well as the incineration process. The impact to the existing NO<sub>2</sub> AQMA should be considered.</p>	<p>A detailed air quality assessment considering traffic impacts was undertaken as well as the cumulative impact of traffic and chimney emissions, as detailed in <b>Section 8.9 (construction) and 8.10 (operation), Chapter 8 Air Quality (Volume 6.2).</b></p>
	<p>The scoping report has identified a number of sources of data to establish estimated background pollutant concentrations. The EIA/ES should demonstrate the impact of pollution concentrations if the development was operational. Real time monitoring of background pollution concentrations will be required and can be agreed.</p>	<p>This has been discussed further with Host Authorities and a suitable location identified.</p>



Consultee	Issue raised	Response
<b>Cambridgeshire County Council &amp; Fenland District Council</b>	All stack height calculations should be provided with raw data, including an analysis of wind direction and weather conditions to demonstrate the likely environmental impacts of this proposal.	A chimney height assessment is included in the ES, at <b>Chapter 8 Air Quality, Section 8.10, Volume 6.2.</b>
<b>Cambridgeshire County Council</b>	The approach proposed in Table 7.1 to comply with the National Planning Policy Framework (NPPF) paragraph 181 on air quality and air quality management areas is supported, namely “There are four AQMAs in Fenland District Council’s jurisdictional area, including three within Wisbech for nitrogen dioxide, particulate matter and sulphur dioxide. These pollutants will be emitted from the stack (all three pollutants) and from the exhausts of construction and operational traffic. As such, it is imperative that appropriate mitigation measures are embedded in the design to ensure the Proposed Development does not prevent the achievement of strategic objectives within Fenland District Council’s air quality action plan.	Agreed scope addressed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2).</b>
<b>Fenland District Council</b>	<p>The methodology for assessing the environmental effects to air quality from traffic and transport has been referred to in Chapter 7.5.8 and Chapter 7.5.27 of the EIA scoping survey.</p> <p>The impacts from dust, odour and noise from vehicle movements on and off the site should be detailed when assessing the environmental effects from traffic and transport or when assessing air quality or noise.</p>	The consideration of fugitive emissions forms part of the scope assessment. Embedded mitigation is designed to minimise dust and odour emissions from vehicle movements.
<b>Fenland District Council</b>	One of the Air Quality Management Areas (AQMA) along Churchill Road is associated to traffic congestion. This is a strategic road route into and out of Wisbech and links to the proposed study area. Further consideration needs to be given to the air quality impacts from a transport perspective, particularly given the suggestion that the site will be capable of handling over 500,000 tonnes of residual waste per annum.	A detailed air quality assessment considering traffic impacts is included, as detailed in <b>Section 8.9 (construction) and 8.10 (operation), Chapter 8 Air Quality (Volume 6.2).</b>
<b>Fenland District Council</b>	The site will require an environmental permit regulated by the Environment Agency. The application process for the environmental permit may or may not be initiated until the planning processes has been finalised. The background air quality levels, operational monitoring requirements and target emission limits will be established within the Environmental Permit.	All data gathered and information provided for the DCO application were utilised in the preparation of the EP application. A twin-track application is proposed whereby the EP application will be prepared alongside the DCO application.



Consultee	Issue raised	Response
<b>Fenland District Council</b>	The EIA should consider the impact of the number and type of vehicle movements that the proposed development will have as well as the incineration process. The impact to the existing NO <sub>2</sub> AQMA should be considered.	The impact of vehicle emissions is considered as outlined in <b>Section 8.9 (construction) and 8.10 (operation), Chapter 8 Air Quality (Volume 6.2).</b>
<b>Middle Level Commissioners</b>	A problem experienced by other waste facilities adjacent to open water courses has led to blockages as a result of wind-bourne debris i.e. dust, plastic bags, paper products etc.	All waste handling will be carried out within enclosed buildings. There are not proposed to be any outside activities that would lead to the generation of dust.
<b>Natural England</b>	The assessment should take account of the risks of air pollution and how these can be managed or reduced. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ). Further information on air pollution modelling and assessment can be found on the Environment Agency website.	Air Pollution Information Service and Environment Agency website was consulted alongside Biodiversity consultants for the project.
<b>Public Health England</b>	Construction activity (including traffic movements) associated with activities of the development may generate localised emissions leading to exposure of local residents and the public. We welcome the proposed inclusion of the Construction Management Plan (CMP) with commitments to mitigate exposure to air pollution (e.g. fine particulate matter, dusts and nitrogen dioxide) to as low as possible below the air quality standards.	Support for the proposed inclusion of the CEMP ( <b>Outline CEMP Volume 7.12</b> ) with commitments to mitigate exposure to air pollution.
<b>Public Health England</b>	Any issues raised by local communities need efficient management during the development and construction phase, as well as the decommissioning phase if the infrastructure is to be removed or upgraded.	The CEMP ( <b>Outline CEMP Volume 7.12</b> ) includes procedure for dealing with any issues raised by the public. A draft, Outline CEMP was one of the documents submitted for statutory consultation.
<b>Public Health England</b>	With regard to emissions from Energy from Waste developments. PHE has reviewed research undertaken to examine the suggested links between emissions from municipal waste incinerators and effects on health ( <a href="https://www.gov.uk/government/publications/municipal-waste-incinerator-emissions-impact-on-health">https://www.gov.uk/government/publications/municipal-waste-incinerator-emissions-impact-on-health</a> ). PHE's risk assessment remains that modern, well run and regulated municipal waste incinerators are not a	Agreed scope addressed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2).</b>



Consultee	Issue raised	Response
	significant risk to public health. While it is not possible to rule out adverse health effects from these incinerators completely, any potential effect for people living close by is likely to be very small. We welcome the operational emissions being scoped into the assessment.	
<b>Public Health England</b>	PHE's view is that the applicant should appraise and describe the measures that will be used to control both point source and fugitive emissions and demonstrate that standards, guideline values or health-based values will not be exceeded due to emissions from the installation, as described above. This should include consideration of any emitted pollutants for which there are no set emission limits."	Refer to <b>Chapter 16 Health (Volume 6.2)</b> .
<b>Public Health England</b>	When considering baseline conditions (of existing air quality) and the assessment and future monitoring of impacts, these should include: <ul style="list-style-type: none"> <li>• consideration of impacts on existing areas of poor air quality e.g. existing or proposed local authority Air Quality Management Areas (AQMAs);</li> <li>• modelling using appropriate meteorological data (i.e. come from the nearest suitable meteorological station and include a range of years and worst-case conditions);</li> <li>• modelling taking into account local topography, congestion and acceleration;</li> <li>• evaluation of the public health benefits of development options which reduce air pollution – even below limit values – as pollutants such as nitrogen dioxide and particulate matter show no threshold below which health effects do not occur.</li> </ul>	Agreed scope addressed in <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2)</b> .
<b>Public Health England</b>	PHE's view is that the proposed study should include a full Health Impact Assessment.	The air quality assessment addresses increased emissions to air against health-based standard. As part of the scope (see <b>Section 8.6, Chapter 8 Air Quality (Volume 6.2)</b> ) an assessment of deposition on land from emissions to air from metals is included as well as a <b>HHRA (Appendix 8B Annex G, Volume 6.4)</b> .

1.1.3 An overview of the key stakeholders consulted, and a brief summary of the issues discussed in relation to air quality outside of formal consultation is presented in **Table 8A.3 Summary of additional engagement regarding air quality**.



**Table 8A.3 Summary of additional engagement regarding air quality**

Stakeholder	Date and Form of engagement	Issue(s) raised	Response
Environment Agency	Meeting 02/03/22	<i>Discussion on the chimney height Assessment approach</i>	Environment Agency agreed the proposed chimney height assessment methodology.
Cambridgeshire County Council (CCC)	Meeting 13/01/22	<i>Discussion of the CCC comments on the PEIR report to agree on the approach in addressing the comments.</i>	Please refer to <b>Table 8A.1 Summary of PEIR responses</b> that details the responses to the CCC comments during PEIR.
Cambridgeshire County Council (CCC) & Fenland District Council (FDC)	Written response to Methodology Statement received 21/7/20	<i>There have been a number of new sensitive Receptors built or permitted in the vicinity of the development that would represent worst-case relevant exposure and thus should be included as specific Receptors. These include a hotel/restaurant adjacent to the site and a new housing development. However, on the basis that the figure showing locations of Receptors is not accompanied with a table showing addresses, we are unable to confirm the locations of vulnerable Receptors e.g. schools, hospitals and care homes. As such, to ensure that all sensitive Receptors are picked up we have provided a list of vulnerable Receptors in the Wisbech area supplied by Laura Harwood that should be taken into account.</i>	Clarification is appreciated and information provided on new or permitted development and the list of other sensitive Receptors in the vicinity of the proposed development. These Receptors are included as specified Receptors in the modelling assessment and a list of all Receptors by name and co-ordinate was provided in the assessment that accompanies the application.





Stakeholder	Date and Form of engagement	Issue(s) raised	Response
		<p><i>Moving forward we would ask that a table of addresses is included in your methodology to demonstrate that all such Receptors have been assessed.</i></p>	
<p><b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b></p>	<p>Written response to Methodology Statement received 21/7/20</p>	<p><i>It has been noted that that there are developments that are nearby to the site or haulage routes that have full planning permission but may not have been developed. These have been identified by Laura Harwood and are attached for your reference. For further information of these developments please use the public planning portal.</i></p>	<p>These developments include the construction of a petrol station at the junction of the A47 on Cromwell Road, the erection of 93 residential properties on land to the southeast of New Drove, and the erection of a single 3-story 6/7 bed residential property on South Brink. As such, the principal emissions from these developments will relate to emissions from vehicles travelling on the local road network for development access/egress. These movements were considered as part of the committed development flows provided by the assessment of traffic and transport and, as such, included in the air quality assessment.</p>
<p><b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b></p>	<p>Written response to Methodology Statement received 21/7/20</p>	<p><i>There are a number of properties close to roads that will be used by traffic accessing the site. The assessment needs to consider the combined impact of all changes in emissions as a result of the development, including the impact of odours as waste vehicles travel directly past these properties.</i></p>	<p>The assessment methodology is set out in <b>Section 8.8, Chapter 8 Air Quality (Volume 6.2)</b>.</p> <p>With respect to odours from waste vehicles, the Scoping Opinion confirms that such potential effects can be scoped out of the assessment due to the negligible risk of significant odour effects during normal operation of the proposed development. As a transient emission source, even if fugitive emissions from waste vehicles were to occur at a level that could be considered representative of detection, it would be unlikely that such emissions would be present for a sufficient time at levels to be considered representative of annoyance.</p>



Stakeholder	Date and Form of engagement	Issue(s) raised	Response
Cambridgeshire County Council (CCC) & Fenland District Council (FDC)	Written response to Methodology Statement received 21/7/20	<p><i>The combined impact of the Energy from Waste (EfW) facility with existing point sources of emissions in the area should be considered. For example, the large boiler at the Lamb-Weston factory. In the methodology report the industrial installations with a Part A Environmental permit were listed. However, as noted in the example above, in addition to those listed please note that Lamb-Weston/Meijer UK Limited, (Wisbech Potato Products Plant, Weasenham Lane, Wisbech,</i></p>	<p>For example, Xu et al<sup>1</sup>. (2020) determined that the exposure to odour from waste vehicles reduced to less than 50% of its peak within 6 seconds and was less than 1 ‘odour activity value’ in all cases, whilst Heroux et al.<sup>2</sup> concluded that, with respect to</p> <p>emissions of odour from waste vehicles: “...even in the worst conditions, odours emissions would not be severe in terms of impact for citizens.”</p> <p>Finally, there have been no recorded complaints of odour from MVV’s other operational EfW CHP Facility in Plymouth, an area where waste vehicles of the same type as those to be used at the proposed development and with a concentration of residential properties on access roads to the plant are present.</p>
			<p><b>Section 2.12</b> of the methodology statement (21/7/20) provides the approach to be taken for assessing emissions from existing point sources in the area. It confirms that emissions from all Part A(1) installations operating prior to 2020 were below reporting thresholds and, therefore, at a level whereby emissions would be considered insignificant. With respect to the Wisbech Potato Products Plant, which was granted a revised permit by the Environment Agency (EA) under the Industrial Emissions Directive in January 2020, the EP and the EA’s Decision Document have been reviewed.</p> <p>The principal source of emission from the installation is a boiler chimney that provides hot water and steam for the installation. Importantly, the EP does not prescribe any emission limits for any emission to air source at the installation due to all emissions being screened out as insignificant. In particular, the Decision Document states:</p>

<sup>1</sup> Xu, A., Chang, H., Zhao, Y., Tan, H., Wang, Y., Zhang, Y., Lu, W. and Wang, H. (2020). ‘Dispersion simulation of odorous compounds from waste collection vehicles: Mobile point source simulation with ModOdor.’ Science of the Total Environment, 711, 135109

<sup>2</sup> Heroux, M., Drakonis, M., Dib Bali, A.K., Legros, R. and Spreutels, L. (2017). ‘Odour Emissions from Waste Collection Vehicles in the Cases of Municipal Food and Mixed Waste: Characterization and Modelling’. Presented at the Sixteenth International Waste Management and Landfill Symposium, Sardinia, 2-6 October 2017



Stakeholder	Date and Form of engagement	Issue(s) raised	Response
	<p>Cambridgeshire, PE13 2RN) is also a Part A process Permit number: EPR/MP3038JY, (issued January 2020) and should be included in the list of installations and its emission limits taken into consideration. Furthermore, the site is in close proximity to a number of Part B processes with</p> <p>Environmental permits . A copy of the Fenland District Council public register of these sites has also been attached and should be included in the list of installations and their emission limits taken into consideration.</p>	<p>“...we agree with the conclusions that emissions will not lead to significant pollution at nearby sensitive human Receptors. The greatest impacts are localised to the Installation. It should also be noted that the Installation is in close proximity to designated Air Quality Management Zones. We have had regard for the impacts of the emissions on these designations, and can conclude that due to the siting of the emission point and the concentration of pollutants emitted, the Installation is unlikely to have any significant impact on the objectives of the AQMA.”</p>	<p>Additionally, the Decision Document states: “This installation is not considered ‘relevant’ for assessment under the Agency’s procedures which cover the Conservation (Natural Habitats &amp;c.) Regulations 1994 (Habitats Regulations). This was determined by referring to the Agency’s guidance ‘AQTAG014: Guidance on identifying ‘relevance’ for assessment under the Habitats Regulations for installations with combustion processes’. There are no other emissions from the installation, thus no detailed assessment of the effect of the releases from the installation on SACs, SPAs, and Ramsar sites is required.”</p> <p>With respect to the Part B installations, all Part B installations (and Part A(1) installations) in England are included in the National Atmospheric Emissions Inventory (NAEI) which is used as input to the Pollution Climate Mapping (PCM) model used by Defra to provide mapped estimates of background concentrations. As discussed in <b>Section 3.10</b> of the methodology statement, these data will form part of the assessment and, consequently, emissions and emission limits from Part A(1) and Part B installations operating up to, and including, 2018, are an implicit consideration of the modelling approach. The PPC Public Register provided by FDC from June 2020 indicates no Part B permits have been awarded since 2017.</p>



Stakeholder	Date and Form of engagement	Issue(s) raised	Response
Cambridgeshire County Council (CCC) & Fenland District Council (FDC)	Written response to Methodology Statement received 21/7/20	<p><i>It is common for EfW plant to include diesel generators on-site to provide backup electricity in the event of an emergency, which allows the plant to shut-down safely. Such generators need to be regularly tested and contribute to high short-term concentrations, even when run for short-periods of time for test purposes. Emissions from such sources are at a much lower level than the stack and therefore can have significant local impacts, even though emission rates are much lower than the main stack. Therefore if such plant are included in the design, the impacts should be modelled in combination with emissions from the main stack and changes in traffic.</i></p>	<p>The design for the EfW CHP Facility makes provision for a single 2.6 MWe emergency generator using ultra low sulphur diesel as a fuel. The emergency generator will be used to provide power in the event that external power to the plant is lost, allowing for a safe, controlled shut-down of the plant. The emergency generator will not be used to export any electricity to the grid and, in that respect, it is not a Specified Generator under Schedule 25B of the Environmental Permitting (England and Wales) Regulations 2016, as amended. The emergency generator will be tested at load every week for a period of 30 minutes, or an aggregated annual run time of 26 hours per year. As such, is it not a qualifying medium combustion plant under Schedule 25A of the same regulations and there is no requirement to consider emissions from the emergency generator from a permitting perspective.</p> <p>The EA only consider emissions from diesel generators as having the potential to cause significant air quality effects if their operation exceeds 50-hours per annum. Whilst operation of the emergency generator is comfortably within this threshold, as a matter of completeness, its emissions were included in the assessment supporting the DCO.</p>
Cambridgeshire County Council (CCC) & Fenland District Council (FDC)	Written response to Methodology Statement received 21/7/20	<p><i>The proposed approach to grid spacing should be reviewed. With a 150m stack, this would lead to Receptor points being spaced 225m apart. If the intention is to report maximum concentrations within the grid, this could lead to the near-field and maximum impacts being under-predicted, as they can vary greatly depending on where the individual</i></p>	<p>The chimney height is 84m and therefore the recommended resolution is <math>84 \times 1.5 = 126</math> m. The applied grid resolution is 40m and therefore in line with the recommended approach.</p>



Stakeholder	Date and Form of engagement	Issue(s) raised	Response
		<i>point falls particularly near to the source.</i>	
<b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b>	Written response to Methodology Statement received 21/7/20	<i>It is recommended that a grid of appropriately spaced points is modelled across each of the designated ecological sites. If exceedances of screening criteria are predicted, this will allow the area affected to be identified.</i>	This is reflected in the model setup.
<b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b>	Written response to Methodology Statement received 21/7/20	<i>The overall significance of the impact of the development should be determined based on the combined impact of all sources affected by the development, i.e. for each Receptor the changes in concentration as a result of emissions from the main stack, any other combustion processes such as diesel generators and the change in traffic should be added together, even if individual changes fall below relevant screening criteria.</i>	This is already reflected in the proposed methodology statement.
<b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b>	Written response to Methodology Statement received 21/7/20	<i>In relation to the Ouse Washes and Nene Washes SACs, 'in-combination' impacts need to be considered in relation to other plans and projects, prior to screening out any impacts.</i>	This is reflected in the approach to be taken for the Habitats Regulations Assessment screening reported in <b>Habitats Regulations Assessment NSER (Volume 5.3)</b> .



Stakeholder	Date and Form of engagement	Issue(s) raised	Response
Cambridgeshire County Council (CCC) & Fenland District Council (FDC)	Written response to Methodology Statement received 21/7/20	<i>Laura Harwood has highlighted that the 2019 air quality monitoring data is now available in the Fenland 2020 Annual Status Report which has been approved by Defra. This is attached for your information.</i>	The sharing of the ASR is appreciated and its findings are reflected in the assessment.
Cambridgeshire County Council (CCC) & Fenland District Council (FDC)	Written response to Methodology Statement received 21/7/20	<i>Fenland District Council and Kings Lynn West Norfolk Borough Council (KLWNBC) Environmental Health Teams have been reviewing the locations of diffusion tubes suggested in the report. It is requested that tubes are also placed on the haulage routes on the A1101 from the A47 in the KLWNBC West Meadowgate district of Wisbech.</i>	The passive monitoring locations were commissioned in October 2020. Passive monitoring locations were additionally installed in KLWN's jurisdictional area along the A1101 to the A47. Details of these monitoring locations are provided in the assessment supporting the ES.
Cambridgeshire County Council (CCC) & Fenland District Council (FDC)	Written response to Methodology Statement received 21/7/20	<i>As part of the Fenland District Council Action Plan a continuous monitor has been installed in the AQMA at the junction on Weasenham Lane and Elm Low Road. Data from the AQY monitor (Monitoring NO<sub>2</sub>, O<sub>3</sub>, PM<sub>2.5</sub> and PM<sub>10</sub>) can also be provided on request by emailing envhealth@fenland.gov.uk. Please note that this monitor has been installed during the</i>	Noted, with thanks.



Stakeholder	Date and Form of engagement	Issue(s) raised	Response
		<i>Coronavirus lockdown period and the data will reflect a lower data set owing to school and workplace closures.</i>	
<b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b>	Written response to Methodology Statement received 21/7/20	<i>The installation of an automatic monitor, as well as diffusion tubes is welcomed. It is suggested that the monitor is located to reflect worst-case locations within the school – i.e. closer to the road than indicated in the methodology report.</i>	Since the methodology statement was drafted, continuous monitoring infrastructure for PM <sub>10</sub> and PM <sub>2.5</sub> (based on beta-attenuation methods) in addition to continuous monitoring of NO <sub>x</sub> and NO <sub>2</sub> was commissioned at the Thomas Clarkson Academy in June 2021. The collected data have been used in this assessment.
<b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b>	Written response to Methodology Statement received 21/7/20	<i>It is understood that the period of monitoring will be restricted by the timescales of the DCO process. However, extension of the monitoring period beyond 6-months is recommended to reduce uncertainty in the data.</i>	The passive monitoring stations were commissioned in October 2020 until December 2021, thus providing more than 12 months of passive monitoring data.
<b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b>	Written response to Methodology Statement received 21/7/20	<i>Any monitoring data from 2020 used in the assessment will need to take into account the influence of the Coronavirus situation.</i>	Please refer to response in <b>Table 8A.1 Summary of PEIR responses for air quality.</b>
<b>Cambridgeshire County Council (CCC) &amp; Fenland District Council (FDC)</b>	Written response to Methodology Statement received 21/7/20	<i>When preparing the Environmental Impact Assessment HIA it should be clear if there are differences between the health impacts on children compared to adults (as there are two schools in proximity to the site)</i>	Please refer to <b>Appendix 8B (Volume 6.4)</b> that includes the completed Human Health Risk Assessment that has assessed impacts on both adults and children.

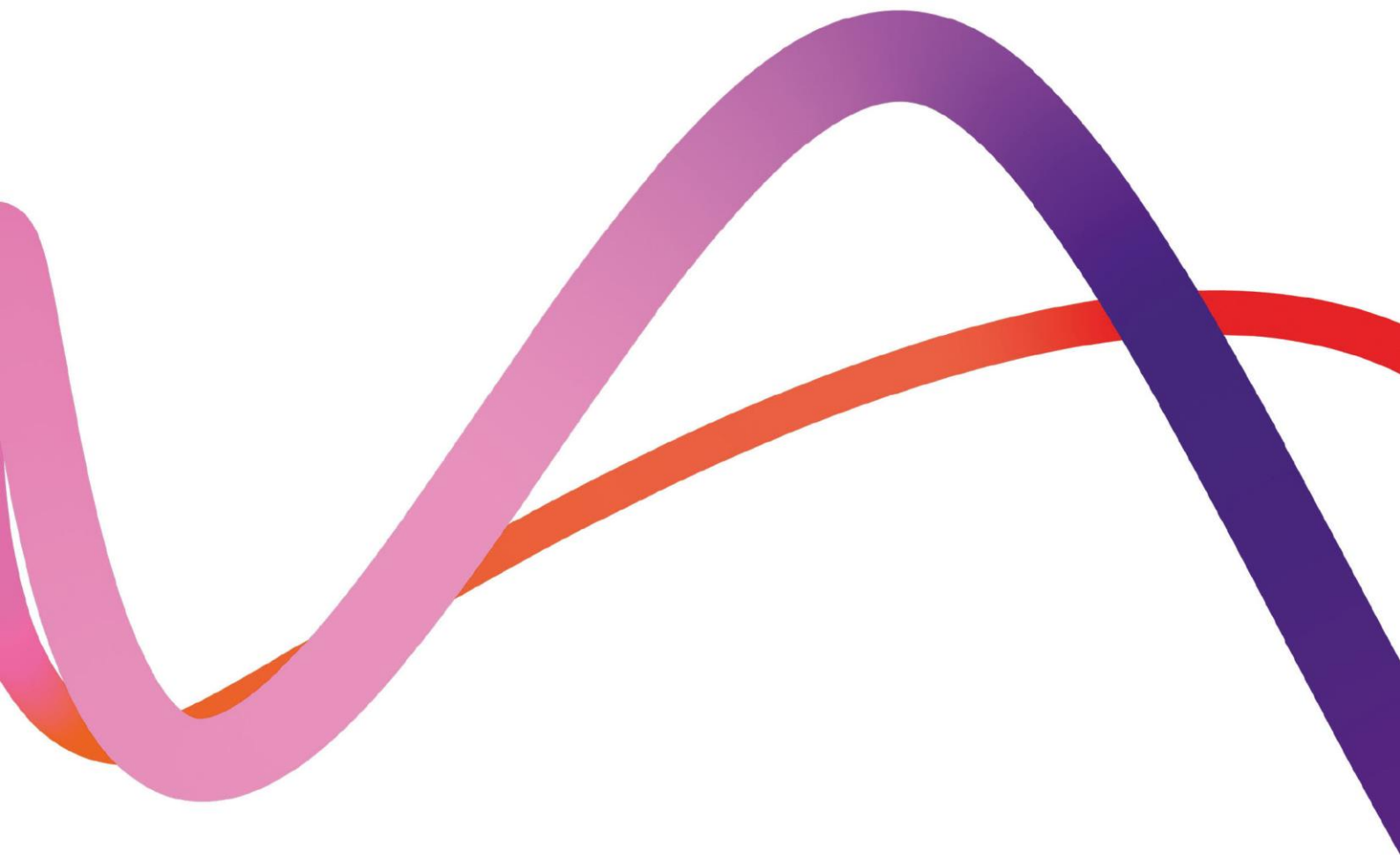


Stakeholder	Date and Form of engagement	Issue(s) raised	Response
Kings Lynn and West Norfolk Borough Council (KLWNBC)	Written response to Methodology Statement received 2/10/20	<p><i>which will link to the comments on the installation of diffusion tubes with the school locations discussed above.</i></p> <p><i>As mentioned within Emma Finch’s [Fitch] response, it would be useful for Figure 2.1 to be accompanied by a table detailing the addresses of each human Receptor location included within the point source and road traffic emission assessment. We are keen to ensure relevant human Receptors are located within our Borough, especially along Elm High Road/A1101, are included within the assessment. It appears this may be the case from Figure 2.1, but we would like confirmation.</i></p> <p><i>Additionally, we recommend the inclusion of an additional human Receptor for point source emissions shown by the location of the red star on the map within this document (to the east of R74). We are keen to ensure that agricultural workers are included within the assessment and would require the 1-hour exposure to be used at this site.</i></p>	<p>It can be confirmed that relevant human receptors along the A1101 located within KLWN’s jurisdiction are reflected in the proposed list of Receptors. Full details of these Receptors, including their name and co-ordinate, are presented in <b>Appendix 8B (Volume 6.4)</b>, including a complete address.</p> <p>UK legislation establishes that standards set for the protection of human health from exposure to poor air quality do not apply at workplace locations where relevant provisions concerning health and safety at work apply, e.g., Schedule 1, Part 1, paragraph 2(b). Nonetheless, a Receptor corresponding to the location of the red star in its list of short-term human Receptors is included.</p>





Stakeholder	Date and Form of engagement	Issue(s) raised	Response
Kings Lynn and West Norfolk Borough Council (KLWNBC)	Written response to Methodology Statement received 2/10/20	<i>Whilst we welcome the comment that a HMIP risk assessment will be completed, we recommend a Health Impact Assessment is undertaken for the development to help elevate concerns.</i>	As discussed in the response to comment 2.1.16 in <b>Table 8A.2 Summary of EIA Scoping Opinion responses for air quality</b> , the consideration of effects upon human health potentially arising from the project is a separate assessment to the air quality assessment and outside of the scope of consideration in this response. The ES includes <b>Chapter 16 Health (Volume 6.2)</b> .
Kings Lynn and West Norfolk Borough Council (KLWNBC)	Written response to Methodology Statement received 2/10/20	<i>We welcome the proposal that additional passive monitoring of NO<sub>2</sub> will be carried out over a 6-month period pre-application at 10 locations to support the verification of the roads dispersion modelling. However, as also mentioned within Emma Finch's response, we request that diffusion tubes are placed on the haulage routes on the A1101 (Elm High Road) from the A47 within the Borough of King's Lynn and West Norfolk. We also welcome the comment that the data recorded be adjusted (or monitoring period extended) to ensure data collected is representative of typical conditions and not skewed by COVID-19.</i>	As discussed in the response to comments in <b>Section 2.2</b> of the methodology statement, passive monitoring locations near to human Receptors on the A1101 within KLWN's jurisdictional area are included. Full 12 year of diffusion tube data from the monitoring survey have been included in the air quality assessment.  <b>Table 8A.1 Summary of PEIR responses for air quality</b> includes a justification on the choice of monitoring data in relation to the effects of the COVID-19 pandemic.



# Medworth Energy from Waste Combined Heat and Power Facility

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June 2022



## Environmental Statement

## Appendix 8B: Air Quality Technical Report

Regulation reference: The Infrastructure  
Planning (Applications: Prescribed  
Forms and Procedure) Regulations  
2009 Regulation 5(2)(a)

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## Executive Summary

The air quality technical report has been produced to support the Development Consent Order (DCO) and Environmental Permit (EP) applications for an Energy from Waste (EfW) combined heat and power (CHP) Facility on the industrial estate, Algores Way, Wisbech, Cambridgeshire.

The EfW CHP Facility will recover useful energy in the form of electricity and steam from non-recyclable (residual), non-hazardous Municipal and Commercial and Industrial waste, generating over 50 megawatts of electricity. The Proposed Development comprises the EfW CHP Facility, CHP Connection, Grid Connection, Temporary Construction Compound, Access Improvements and Water Connections. The site where the EfW CHP Facility, (the main source of emissions to air), will be located is south-west of Wisbech town centre.

The overall air quality assessment considered potential impacts on local air quality during the construction and operational phase using a combination of qualitative and quantitative tools, applying widely accepted techniques. Potential impacts were assessed against criteria set out in relevant guidance and legislation. This technical report only covers impacts from traffic and chimney emissions where detailed air dispersion modelling was undertaken. The assessment of construction dust and potential emissions from construction plant, from all project components of the proposed development, is presented in the main body of the air quality ES chapter (**Chapter 8: Air Quality, Volume 6.2**).

The assessment has defined current and future air quality baseline levels using a combination of publicly available information from the relevant local authorities and Defra and from a bespoke monitoring survey. This report presents the technical methodology used to assess point source emissions to air during normal, abnormal and emergency operational scenarios for the EfW CHP Facility. It also presents the methodology for the traffic emission dispersion modelling undertaken to calculate the contribution of traffic emissions associated with the Proposed Development on local air quality. A Human Health Risk Assessment (HHRA) of dioxin/furan emissions from the EfW CHP Facility is also included in line with the requirements of the EA as **Annex G**.

The assessment has used detailed dispersion modelling to predict concentrations and deposition rates of a number of air pollutants that may be emitted from the chimneys and odour control unit at human and ecological Receptor locations in the vicinity of the proposed development. The assessment also assessed potential metal deposition on land as well as an HHRA to assess potential impacts from emissions of dioxins and furans.

The assessment has incorporated a number of worst-case assumptions, which likely result in an overestimation of the predicted ground level impact. As a result of these worst-case assumptions, the predicted results should be considered the upper limit of model uncertainty for a scenario where the actual site impact is determined. Results presented within the report are provided on a factual basis and without interpretation. Assessment of the significance of these results is made within the main body of the ES chapter (**Chapter 8: Air Quality, Volume 6.2**).



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# 1. Introduction

## 1.1 Background

- 1.1.1 Medworth CHP Limited (the Applicant) is applying to the Secretary of State (SoS) for a Development Consent Order (DCO) to construct operate and maintain an Energy from Waste (EfW) Combined Heat and Power (CHP) Facility on the industrial estate, Algores Way, Wisbech, Cambridgeshire. Together with associated Grid Connection, CHP Connection, Access Improvements, Water Connections, and Temporary Construction Compound (TCC), these works are the Proposed Development.
- 1.1.2 The Proposed Development would recover useful energy in the form of electricity and steam from over half a million tonnes of non-recyclable (residual), non-hazardous municipal, commercial and industrial waste each year. The Proposed Development has a generating capacity of over 50 megawatts and the electricity would be exported to the grid. The Proposed Development would also have the capability to export steam and electricity to users on the surrounding industrial estate. Further information is provided in **Chapter 3: Description of the Proposed Development (Volume 6.2)**.
- 1.1.3 The Proposed Development is a Nationally Significant Infrastructure Project (NSIP) under Part 3 Section 14 of the Planning Act 2008 (2008 Act) by virtue of the fact that the generating station is located in England and has a generating capacity of over 50 megawatts (section 15(2) of the 2008 Act). It, therefore, requires an application for a DCO to be submitted to the Planning Inspectorate (PINS) under the 2008 Act. PINS will examine the application for the Proposed Development and make a recommendation to the SoS for Business, Energy and Industrial Strategy (BEIS) to grant or refuse consent. On receipt of the report and recommendation from PINS, the SoS will then make the final decision on whether to grant the Medworth EfW CHP Facility DCO.

## 1.2 The Applicant and the project team

- 1.2.1 The Applicant is a wholly owned subsidiary of MVV Environment Limited (MVV). MVV is part of the MVV Energie AG group of companies. MVV Energie AG is one of Germany's leading energy companies, employing approx. 6,500 people with assets of around €5 billion and annual sales of around €4.1 billion. The Proposed Development represents an investment of approximately £450m.
- 1.2.2 The company has over 50-years' experience in constructing, operating, and maintaining EfW CHP facilities in Germany and the UK. MVV Energie's portfolio includes a 700,000 tonnes per annum residual EfW CHP facility in Mannheim, Germany.
- 1.2.3 MVV Energie has a growth strategy to be carbon neutral by 2040 and thereafter carbon negative, i.e., climate positive. Specifically, MVV Energie intends to:





- reduce its direct carbon dioxide (CO<sub>2</sub>) emissions by over 80% by 2030 compared to 2018;
- reduce its indirect CO<sub>2</sub> emissions by 82% compared to 2018;
- be climate neutral by 2040; and
- be climate positive from 2040.

1.2.4 MVV's UK business retains the overall group ethos of 'belonging' to the communities it serves whilst benefitting from over 50 years' experience gained by its German sister companies.

1.2.5 MVV's largest project in the UK is the Devonport EfW CHP Facility in Plymouth. Since 2015, this modern and efficient facility has been using around 265,000 tonnes of municipal, commercial and industrial residual waste per year to generate electricity and heat, notably for Her Majesty's Naval Base Devonport in Plymouth, and exporting electricity to the grid.

1.2.6 In Dundee, MVV has taken over the existing Baldovie EfW Facility and has developed a new, modern facility alongside the existing facility. Operating from 2021, it uses up to 220,000 tonnes of municipal, commercial and industrial waste each year as fuel for the generation of usable energy.

1.2.7 Biomass is another key focus of MVV's activities in the UK market. The biomass power plant at Ridham Dock, Kent, uses up to 195,000 tonnes of waste and non-recyclable wood per year to generate green electricity and is capable of exporting heat.

1.2.8 To prepare the ES for the Proposed Development, the Applicant has engaged Wood Group UK Limited (Wood). Wood is registered with the Institute of Environmental Management and Assessment (IEMA)'s Environmental Impact Assessment (EIA) Quality Mark scheme. The scheme allows organisations that lead the co-ordination of EIAs in the UK to make a commitment to excellence in their EIA activities and have this commitment independently reviewed.

## 1.3 The Proposed Development

1.3.1 The Proposed Development comprises the following key elements:

- The EfW CHP Facility;
- CHP Connection;
- Temporary Construction Compound (TCC);
- Access Improvements;
- Water Connections; and
- Grid Connection.

1.3.2 A summary description of each Proposed Development element is provided below. A more detailed description is provided in **ES Chapter 3: Description of the Proposed Development (Volume 6.2)** of the ES. A list of terms and abbreviations



can be found in **Chapter 1 Introduction, Appendix 1F Terms and Abbreviations (Volume 6.4)**.

- **EfW CHP Facility Site:** A site of approximately 5.3ha located south-west of Wisbech, located within the administrative areas of Fenland District Council and Cambridgeshire County Council. The main buildings of the EfW CHP Facility would be located in the area to the north of the Hundred of Wisbech Internal Drainage Board (HWIDB) drain bisecting the site and would house many development elements including the tipping hall, waste bunkers, boiler house, turbine hall, air cooled condenser, air pollution control building, chimneys and administration building. The gatehouse, weighbridges, 132kV switching compound and laydown maintenance area would be located in the southern section of the EfW CHP Facility Site.
- **CHP Connection:** The EfW CHP Facility would be designed to allow the export of steam and electricity from the facility to surrounding business users via dedicated pipelines and private wire cables located along the disused March to Wisbech railway. The pipeline and cables would be located on a raised, steel structure.
- **TCC:** Located adjacent to the EfW CHP Facility Site, the compound would be used to support the construction of the Proposed Development. The compound would be in place for the duration of construction.
- **Access Improvements:** includes access improvements on New Bridge Lane (road widening and site access) and Algores Way (relocation of site access 20m to the south).
- **Water Connections:** A new water main connecting the EfW CHP Facility into the local network will run underground from the EfW CHP Facility Site along New Bridge Lane before crossing underneath the A47 (open cut trenching or horizontal directional drilling (HDD)) to join an existing Anglian Water main. An additional foul sewer connection is required to an existing pumping station operated by Anglian Water located to the northeast of the Algores Way site entrance and into the EfW CHP Facility Site.
- **Grid Connection:** This comprises a 132kV electrical connection using underground cables. The Grid Connection route begins at the 132kV switching compound in the EfW CHP Facility Site and runs underneath New Bridge Lane, before heading north within the verge of the A47 to the Walsoken Substation on Broadend Road. From this point the cable would be connected underground to the Walsoken DNO Substation.

1.3.3

Centred at National Grid Reference TF 45564 07955, the EfW CHP Facility Site is located within an industrial area at the southern edge of Wisbech close to the A47, approximately 2km south-west of Wisbech town centre. There will be two accesses to the site:

- East via Algores Way and onto Weasenham Lane to the wider network, or
- South via New Bridge Lane and via Cromwell Road to the wider network.

1.3.4

The New Bridge Lane access will be used for HGV deliveries.



## 1.4 Scope of Assessment

1.4.1 This section presents the scope of the assessment considering the comments received in the Scoping Opinion, at statutory consultation and any Stakeholder engagement undertaken with CCC after the statutory consultation (refer to **Appendix 8A Stakeholder consultation comments on Air Quality (Volume 6.4)**).

1.4.2 This assessment has considered all projects components which make up the Proposed Development and included the following

- Construction phase:
  - ▶ Qualitative assessment of potential impacts to local air quality associated with construction dust; and
  - ▶ Quantitative assessment of potential impacts to local air quality associated with construction traffic.
- Operational phase:
  - ▶ Quantitative assessment of potential impacts to local air quality associated with chimney and traffic emissions during the normal operations;
  - ▶ Quantitative assessment of metal deposition on land;
  - ▶ Quantitative human health risk assessment of daily intake of PCDD/Fs and dioxin-like PCBs;
  - ▶ Quantitative assessment of potential impacts to local air quality associated with chimney emissions during abnormal operations; and
  - ▶ Quantitative assessment of potential odour emissions during abnormal operations.

### Spatial scope

1.4.3 The spatial scope of the assessment of air quality covers the area of the Proposed Development, together with the Zone of Influence (Zol) that has formed the basis of the Study Area, the approach to which is described in **Section 4**.

### Temporal scope

1.4.4 The temporal scope of the assessment of air quality is consistent with the period over which the development would be carried out and therefore covers the construction and operational periods, 2023-2026 for the construction phase and 2027-2066 for the operational phase (2027 will be the first full year of operation).



## 2. Assessment Criteria

### 2.1 Relevant legislation and guidance

#### Legislative context

2.1.1 Legislation relevant to the assessment of the effects on Air Quality Receptors is provided in **Table 8B2.1 Legislative context for Air Quality** below:

**Table 8B2.1 Legislative context for Air Quality**

Legislation	Implications
<b>Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe</b>	The Directive sets limits, or target levels, for selected pollutants that are to be achieved by specific dates and also details procedures that European Union (EU) Member States should take in assessing ambient air quality. Regulated pollutants include sulphur dioxide (SO <sub>2</sub> ), nitrogen dioxide (NO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), particulate matter PM <sub>10</sub> and PM <sub>2.5</sub> , lead (Pb), benzene (C <sub>6</sub> H <sub>6</sub> ) and carbon monoxide (CO).
<b>The Air Quality Standards (England) Regulations 2010 (Statutory Instrument (SI) 2010/1001), as amended</b>	<p>The Air Quality Standards (AQS) Regulations implemented the requirements of Directive 2008/50/EC and report limit values at differing averaging periods for certain pollutants. There are limits provided for the protection of human health for SO<sub>2</sub>, NO<sub>2</sub>, C<sub>6</sub>H<sub>6</sub>, CO and Pb. Target values have been set for the concentration of PM<sub>2.5</sub>.</p> <p>A limit value for the concentration of PM<sub>2.5</sub> is also provided. All limit values included in these Regulations should not be exceeded.</p>
<b>The Air Quality (England) Regulations 2000 (SI 2000/928), as amended</b>	Provides UK Air Quality Objectives (AQOs) for a range of different pollutants, unlike Air Quality Standards, there is no statutory obligation to meet AQOs; AQOs are policy targets often expressed as a maximum ambient concentration not to be exceeded, either without exception or with a permitted number of exceedances, over a specified averaging period.
<b>The Environment Act 2021</b>	The Environment Act 2021 presents the new environmental programme. It aims to improve air and water quality, tackle waste, increase recycling, halt the decline of species and improve the natural environment. The Act establishes legally binding duty to the government to bring two new targets in Secondary legislation in October 2022. These include reducing the annual mean levels of fine particles (PM <sub>2.5</sub> ) and reducing public exposure to PM <sub>2.5</sub> .
<b>The Environment Act 1995</b>	<p>The Environment Act 1995 relates to a wide range of environmental issues. The Act covers the control of pollution and lays out the responsibility of the governing bodies in the UK responsible for the enforcement of environmental laws.</p> <p>Part IV of the Environment Act 1995 requires that Local Authorities periodically review air quality within their individual areas.</p>



Legislation	Implications
	This process of Local Air Quality Management (LAQM) is an integral part of delivering the Government's Air Quality Objectives (AQOs).
<b>The Environmental Protection Act 1990</b>	Under Part III Section 79(1)(d) of the Environmental Protection Act 1990 (c. 43), dust and odour can both be statutory nuisances. However, there are no statutory standards for dust deposition or odour which can be used to assess whether a nuisance has occurred, principally due to the normal variability of atmospheric dust and odours.
<b>Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions (integrated pollution prevention and control)</b>	Directive 2010/75/EU (the Industrial Emissions Directive, or IED) requires Competent Authorities in European Union member states to control and reduce the impact of certain industrial emissions on the environment. Operators of activities listed in Annex I of IED are required to apply to the relevant Competent Authority (the 'Regulator') for a permit to operate their installation. Regulators must set conditions in permits so as to achieve a high level of protection for the environment as a whole, based on the use of the best available techniques (BAT). Amongst others, emissions to air from permitted installations must meet the Best Available Technique Associated Emission Levels (BAT-AEL) set in the relevant sectoral BAT Conclusions and ensure no significant pollution is caused. The UK Government has committed to maintaining environmental standards post-EU exit and continues to apply the successful model of integrated pollution control.
<b>The Environmental Permitting (England and Wales) Regulations 2016 (SI 2016/1154)</b>	The Environment Agency (EA) acts as the Competent Authority and regulates relevant activities under the Environmental Permitting (England and Wales) Regulations 2016 (SI 2016/1154).
<b>The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018 (SI 2018/764), as amended</b>	The Non-Road Mobile Machinery (NRMM) Regulations provide the requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery. This regulation transposes the European Directive 97/68/EC that was repealed and replaced by Regulation EU 2016/1628, into UK law.

## Technical guidance

2.1.2 Technical guidance used to inform the assessment is listed in **Table 8B2.2 Technical guidance for Air Quality assessment** below.

**Table 8B2.2 Technical guidance for Air Quality assessment**

Technical guidance	Implications
<b>Ministry of Housing, Communities &amp; Local Government <i>Air Quality Planning Practice Guidance</i> (2019)</b>	This guidance provides guiding principles on how planning can take account of the impact of new development on air quality.



Technical guidance	Implications
<b>Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) <i>Land-Use Planning &amp; Development Control: Planning for Air Quality</i> (2017)</b>	No official procedure exists for classifying the magnitude and significance of air quality effects from a new development for planning purposes, this guidance issued by the IAQM and EPUK suggests ways to address the issue.
<b>IAQM's <i>Guidance on the assessment of dust from demolition and construction</i> (2014)</b>	This guidance presents a series of steps to be undertaken to determine whether dust effects associated with construction and demolition activities are likely to be considered significant.
<b>IAQM's <i>A guide to the assessment of air quality impacts on designated nature conservation sites</i> (2020)</b>	This guidance document was produced to assist air quality practitioners to assess the air quality impacts of development on designated nature conservation sites. The guidance clarifies that the overall assessment of the significance of effects on such sites should be made by a suitably qualified ecologist, not the air quality practitioner.
<b>IAQM's <i>Guidance on the assessment of odour for planning</i> (2018)</b>	This guidance was introduced by the IAQM as a means for air quality practitioners to assess the significance of odour effects specific to planning applications.
<b>The Environment Agency's <i>Air Emissions Risk Assessment for your Environmental Permit</i> (2016) (as amended)</b>	Although this guidance is specifically drafted for environmental permit applications and is not directly applicable to planning applications, it does provide guidance in a number of areas which is considered to represent best practice, including, amongst others: <ul style="list-style-type: none"> <li>• screening criteria for protected conservation areas;</li> <li>• guidelines, known as Environmental Assessment Levels (EALs), for certain pollutants that do not have a specified AQS or AQO; and</li> <li>• maximum deposition rates (MDRs) for certain metals.</li> </ul>
<b>Local Air Quality Management Technical Guidance (LAQM.TG16) (2021)</b>	This document provides guidance for technical officers and local authorities to discharge their obligations under the LAQM regime. It contains guidance on numerous areas including, for example; <ul style="list-style-type: none"> <li>• screening tools and methodologies;</li> <li>• air quality monitoring;</li> <li>• estimating emissions; and</li> <li>• dispersion modelling.</li> </ul>
<b>The Environment Agency's <i>Environmental Permitting: air dispersion modelling reports</i></b>	Although this guidance has been drafted specifically for air quality assessments supporting environmental permit applications, it does provide best practice methods and approaches for modelling the dispersion of emissions from industrial chimneys.



Technical guidance	Implications
World Health Organisation (WHO) Air Quality Guidelines for Europe (2000) and WHO Air Quality Guidelines Global Update (2005)	These documents provide health-based air quality guidelines for a number of pollutants and critical levels for biodiversity Receptors.
Her Majesty's Inspectorate of Pollution (HMIP) Risk Assessment of Dioxin releases from Municipal Waste Incinerators (1996) and US Environmental Protection Agency (US EPA) Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities ("HHRAP") (2005)	These documents provide procedures for assessing the risk to human health from total bodily uptake of polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), also known as dioxins and furans.

## 2.2 Pollutant descriptions

2.2.1 **Table 8B2.3 Summary of the pollutants assessed** provides a brief description of the potential effects on human health and the environment for the pollutants considered in this assessment, together with their principal emission sources in the UK.

**Table 8B2.3 Summary of the pollutants assessed**

Pollutant	Description and effect on human health and the environment	Principal sources
<b>Carbon monoxide (CO)</b>	The toxicity of CO results in it binding avidly to haemoglobin and thus reducing the oxygen-carrying capacity of the blood. In very high doses, the restriction of oxygen to the brain and heart can be fatal. At lower concentrations, CO can affect higher cerebral function, heart function and exercise capacity.	The principal source of CO is emissions from petrol vehicles
<b>Sulphur dioxide (SO<sub>2</sub>)</b>	At high concentrations SO <sub>2</sub> is a potent bronchoconstrictor, and asthmatic individuals are more susceptible. It is likely that SO <sub>2</sub> contributes to respiratory symptoms, reduced lung function and rises in hospital admissions.  Exposure to high levels of SO <sub>2</sub> over a long period can result in structural changes in the lungs and may enhance sensitisation to allergens.	The principal source of SO <sub>2</sub> is the combustion of fossil fuels containing sulphur and, in the UK, this is primarily through the combustion of coal in power stations, oil refining and solid fuel manufacturing
<b>Particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>)</b>	Particulate matter is the term used to describe all suspended solid matter. Particulate matter with an aerodynamic diameter of less than 10µm (PM <sub>10</sub> ) is the subject of health concerns because of its ability to penetrate and remain deep within the lungs.	Road transport, industrial processes and electricity generation. Other pollutants, including NO <sub>2</sub> and SO <sub>2</sub> , have the potential to form secondary



Pollutant	Description and effect on human health and the environment	Principal sources
	<p>The health effects of particles are difficult to assess, and evidence is mainly based on epidemiological studies. Evidence suggests that there may be associations between increased PM<sub>10</sub> concentrations and increased mortality and morbidity rates, changes in symptoms or lung function, episodes of hospitalisation or doctors consultations. Recent reviews by the World Health Organisation (WHO) and Committee on the Medical Effects of Air Pollutants (COMEAP) have suggested exposure to a finer fraction of particles (PM<sub>2.5</sub>) give a stronger association with the observed health effects. PM<sub>2.5</sub> typically makes up around two-thirds of PM<sub>10</sub> emissions and concentrations.</p>	<p>particulates which are often smaller than PM<sub>10</sub>.</p>
<p><b>Oxides of nitrogen (NO<sub>x</sub>)</b></p>	<p>Nitrogen dioxide (NO<sub>2</sub>) and Nitric oxide (NO) are both collectively referred to as oxides of Nitrogen (NO<sub>x</sub>). It is NO<sub>2</sub> that is associated with adverse effects on human health. Most atmospheric emissions are in the form of NO</p> <p>which is converted to NO<sub>2</sub> in the atmosphere through reactions with Ozone. The oxidising properties of NO<sub>2</sub> theoretically could damage lung tissue, and exposure to very high concentrations of NO<sub>2</sub> can lead to inflammation of lung tissue, affecting the ability to fight infection. The greatest impact of NO<sub>2</sub> is on individuals with asthma or other respiratory conditions, but consistent impacts on these individuals is at levels of greater than 564µgm<sup>-3</sup>, much higher than typical UK ambient concentrations.</p>	<p>All combustion processes produce NO<sub>x</sub> emissions, and the principal source of NO<sub>x</sub> is road transport</p>
<p><b>Hydrogen fluoride (HF)</b></p>	<p>HF is an extremely corrosive chemical and is rapidly absorbed into the body where it acts on all cells as a direct poison. It permeates and dissolves most surfaces. This compound may cause:</p> <p>Disturbance of calcium and magnesium metabolism; Pulmonary fibrosis; Cardiac arrhythmias; and Bone damage.</p>	<p>Some uses of HF include: Etching and glass cleaning in the manufacture of glass; Semiconductors (computer chips), and ceramics; Rust removal; Metalurgy laboratories; Petroleum exploration, refining (alkylation units); Electroplating; Ceramic cleaning; Aluminium brighteners; Various chemical industries.</p>
<p><b>Hydrogen chloride (HCl)</b></p>	<p>Hydrogen chloride is a toxic gaseous compound. It produces protein denaturation and hence cell death. Exposure to inhalation of HCl can affect the alveolar cells. Pulmonary oedema may develop after two to twelve hours. Other symptoms can include:</p> <p>Cough; Dyspnoea; and Chest pain. Also, it can damage the cornea causing intense ocular irritation.</p>	<p>The majority of HCl emissions in the UK are from public power installations. The remaining emissions are from other fuel combustion and waste incineration.</p>





Pollutant	Description and effect on human health and the environment	Principal sources
<b>Volatile organic compounds (VOCs)</b>	Given that the speciation of VOC emissions is not known, specific details of the compounds emitted cannot be given. Certain VOCs are considered to be potential carcinogens, and to have an adverse effect on human health.	Wide variety of sources, both natural and anthropogenic.
<b>Metals</b>	These are present as solids and liquids associated with particulate matter. The metals considered have a range of toxic and carcinogenic effects including increased risk of lung cancer, renal disease and effects on the nervous system and kidneys.	Fuel combustion and industrial processes.
<b>Ammonia (NH<sub>3</sub>)</b>	Ammonia can lead to damage of terrestrial and aquatic ecosystems through deposition of eutrophying pollutants and through acidifying pollutants. Precursor to secondary PM and therefore contributes to the ill-health effects caused by PM <sub>10</sub> and PM <sub>2.5</sub> .	Mainly derived from agriculture, primarily livestock manure/slurry management and fertilisers. Small proportion derived from variety of sources including transport and waste disposal.
<b>Polycyclic aromatic hydrocarbons (PAHs)</b>	Studies of occupational exposure to PAHs have shown an increased incidence of tumours of the lung, skin and possibly bladder and other sites. Lung cancer is most obviously linked to exposure to PAHs through inhaled air. Individual PAHs vary in their ability to induce tumours in animals or humans. The carcinogenic potency of some PAHs is unknown or uncertain. Individual PAHs have been classified by the International Agency for Research on Cancer, with three classified as “probably carcinogenic to humans”, including B[a]P, and three classified as “possibly carcinogenic to humans”.	There are many different PAHs emanating from a variety of sources. B[a]P is often used as a marker for the most hazardous PAHs. The main sources of B[a]P in the UK are domestic coal and wood burning, fires (e.g., accidental fires, bonfires, forest fires, etc), and industrial processes such as coke production. Road transport is the largest source for total PAHs, but this source is dominated by species thought to be less hazardous than B[a]P.
<b>Dioxins and furans (PCDD/Fs)</b>	The term dioxins and furans are used to refer to polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans. These compounds have been shown to possess a number of toxicological properties. The major concern is centred on their possible role in immunological and reproductive effects. They can potentially arise from any thermal process where chlorine, in any form, is present.	UK emissions to air of PCDD/Fs have declined by approximately 80% over the period 1990-2008. By far and large, the greatest reduction has been in the waste incineration sector, brought about by the introduction of a compulsory ELV of 0.1ng I-TEQ m <sup>-3</sup> for PCDD/Fs emissions from waste incineration plant.



Pollutant	Description and effect on human health and the environment	Principal sources
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In 1990, emissions of PCDD/Fs from waste incineration accounted for approximately 51% of total UK emissions. By 2006, this figure had reduced more than ten-fold to 4.6%. The largest contributor to total UK emissions of PCDD/Fs is now domestic waste burning, bonfires and other accidental fires, accounting for more than 62% of total UK emissions in 2006.

## 2.3 Criteria appropriate to the assessment

### Concentrations in air

- 2.3.1 **Table 8B2.4 Air Quality Standards, Objectives and Environmental Assessment Levels** summarises the applicable air quality standards (AQS), objectives (AQOs), environmental assessment levels (EALs) and critical levels appropriate for assessing concentrations in air and resultant impacts on human health, vegetation and ecosystems.
- 2.3.2 There are no AQS, AQOs nor EALs for PCDD/Fs as the overwhelming majority of human exposure to these compounds arises through dietary ingestion. Emissions of PCDD/Fs and their impact on human health are assessed in **Annex F Human Health Risk Assessment**.
- 2.3.3 Given that the exact speciation of the VOC and PAH group of compounds cannot be known until extractive emission monitoring surveys are undertaken, this assessment has adopted a pragmatic, worst-case approach by assessing the total group modelled contributions against the individual group component that has the most stringent assessment metric.
- 2.3.4 When setting their guidelines on human exposure to HF, Expert Panel on Air Quality Standards (EPAQS) state that, with regard to the monthly guideline value, achievement of this metric can be achieved should the shorter term guideline be met. Consequently, only the shorter term guideline is assessed in this study.
- 2.3.5 In terms of an appropriate SO<sub>2</sub> and NH<sub>3</sub> critical level adopted by the assessment, consideration needs to be made as to whether lichens and bryophytes form an integral part of the ecosystem. The **ES Chapter 11: Biodiversity (Volume 6.2)** confirms these do not form a significant part of any of the ecological Receptors assessed in this study and, consequently, the higher critical levels for SO<sub>2</sub> and NH<sub>3</sub> of 20µg m<sup>-3</sup> and 3µg m<sup>-3</sup>, respectively, have been adopted.



Table 8B2.4 Air Quality Standards, Objectives and Environmental Assessment Levels

Pollutant	AQO/EAL	Averaging Period	Value ( $\mu\text{g m}^{-3}$ )
Nitrogen dioxide ( $\text{NO}_2$ )	AQO	Annual mean	40
	AQO	1-hour mean, not more than 18 exceedances a year (equivalent of 99.79 Percentile)	200
Oxides of nitrogen ( $\text{NO}_x$ ) - Ecological Receptors	AQO	Annual mean	30
	EAL	Daily Mean	75
Carbon monoxide ( $\text{CO}$ )	AQO	Rolling 8-hour mean	10,000
PM <sub>10</sub>	AQO	Annual mean	18
	AQO	24-hour mean, not more than 7 exceedances a year (equivalent of 98.08 Percentile)	50
PM <sub>2.5</sub>	AQO	Annual mean (current limit applied)	20
		Annual mean (draft legislation)	10
Sulphur dioxide ( $\text{SO}_2$ ) – Human Receptors	AQO	1-hour mean not to be exceeded more than 24 times a year (equivalent to 99.73 percentile)	350
	AQO	24-hour mean not to be exceeded more than 3 times a year (equivalent to 99.18 percentile)	125
	AQO	15-min mean not to be exceeded more than 35 times a year (equivalent to 99.9 percentile)	266
Sulphur dioxide ( $\text{SO}_2$ ) – Ecological Receptors	AQO	Annual mean	20
Volatile organic compounds (as Benzene)	AQO	Annual mean	5
Hydrogen Chloride (HCl)	EAL	1-hour mean	750
Hydrogen Fluoride (HF)	EAL	1-hour mean	160
Hydrogen Fluoride (HF) – Ecological Receptors	EAL	24-hour mean	5
	EAL	Weekly mean	0.5
Group 1 Metals (Cd)	EAL	Annual mean	5 ( $\text{ng m}^{-3}$ )
	EAL	1-hour mean	1.5
Group 2 Metals (Hg)	EAL	Annual mean	0.25



Pollutant	AQO/EAL	Averaging Period	Value ( $\mu\text{g m}^{-3}$ )
	EAL	1-hour mean	7.5
<b>Group 3 Metals (As)</b>	EAL	Annual mean	3 ( $\text{ng m}^{-3}$ )
	EAL	1-hour mean	15
<b>Group 3 Metals (Sb)</b>	EAL	Annual mean	5
	EAL	1-hour mean	150
<b>Group 3 Metals (Cr(III))</b>	EAL	Annual mean	5
	EAL	1-hour mean	150
<b>Group 3 Metals (Cr(VI))</b>	EAL	Annual mean	0.2 ( $\text{ng m}^{-3}$ )
<b>Group 3 Metals (Co)</b>	EAL	Annual mean	0.2
	EAL	1-hour mean	6
<b>Group 3 Metals (Cu)</b>	EAL	Annual mean	2
	EAL	1-hour mean	60
<b>Group 3 Metals (Pb)</b>	EAL	Annual mean	0.25
<b>Group 3 Metals (Mn)</b>	EAL	Annual mean	1
	EAL	1-hour mean	1500
<b>Group 3 Metals (Ni)</b>	EAL	Annual mean	20 ( $\text{ng m}^{-3}$ )
	EAL	1-hour mean	30
<b>Group 3 Metals (V)</b>	EAL	Annual mean	5
	EAL	1-hour mean	1
<b>PAHs (as B(a)P)</b>	EAL	Annual mean	1 ( $\text{ng m}^{-3}$ )
<b>PCBs</b>	EAL	Annual mean	0.2
	EAL	1-hour mean	6
<b>Ammonia (NH<sub>3</sub>)</b>	EAL	Annual mean	180
	EAL	1-hour mean	2500
<b>Ammonia (NH<sub>3</sub>) – Ecological Receptors</b>	EAL	Annual mean	3

## Critical Loads

2.3.6 Eutrophication-based critical loads are provided as a range and, generally, the lower end of the range should be used as a conservative assessment. The critical loads for acidification are more complicated, in that both the nitrogen and sulphur deposition fluxes must be considered at the same time. Therefore, a critical load function is specified for acidification, via the use of three critical load parameters:

- $CL_{\text{maxS}}$  – the maximum critical load of sulphur, above which the deposition of sulphur alone would be considered to lead to an exceedance;
- $CL_{\text{minN}}$  – a measure of the ability of a system to “consume” deposited nitrogen (e.g., via immobilisation and uptake of the deposited nitrogen); and



- CL<sub>maxN</sub> – the maximum critical load of acidifying nitrogen, above which the deposition of nitrogen alone would be considered to lead to an exceedance.

2.3.7

APIS contains information on applicable critical loads for various habitats and species. Critical load data extracted from APIS for the ecological Receptors considered in this assessment is provided in **Table 8B2.5 Critical load data extracted from APIS for the ecological Receptors** below. The critical loads reported are for the most sensitive qualifying habitat/species for that site as reported by the APIS Site Relevant Critical Load (SRCL) tool and are used in this assessment as a conservative approach. It is possible that the qualifying feature(s) with the lowest critical load is(are) not present at the location where the impact is predicted. However, this approach allows a conservative estimate of impact.

**Table 8B2.5 Critical load data extracted from APIS for the ecological Receptors**

Receptor Name	MinCLN (kgN/ha/y)	CLminN (keq/ha/y)	CLmaxN (keq/ha/y)	CLminS (keq/ha/y)
Nene Washes SAC/SPA/Ramsar	20	0.223	0.522	0.156
Ouse Washes SAC/SPA/Ramsar	20	0.223	0.522	0.156
River Nene LWS	15	No critical load data available from APIS		



## 3. Current baseline

### 3.1 EfW CHP Facility Site, Access Improvements, CHP Connection, TCC and Water Connections

#### Local Air Quality Management

3.1.1 In line with Local Air Quality Management (LAQM) requirements, FDC carry out air quality monitoring and produce Annual Status Reports (ASR).

3.1.2 FDC has declared three AQMAs in Wisbech:

- Wisbech AQMA No.1 (SO<sub>2</sub>) approximately 1.0km north of the EfW CHP Facility Site;
- Wisbech AQMA No.2 (PM<sub>10</sub>) approximately 1.7km north-east of the EfW CHP Facility Site; and
- Wisbech AQMA No.3 (NO<sub>2</sub>) approximately 1.2km north-east of the EfW CHP Facility Site.

3.1.3 As stated in the 2020 ASR, in 2019 FDC proposed to revoke Wisbech AQMAS No. 1 & 2. As these have yet to be revoked they have been considered in this assessment. Continuous monitoring

3.1.4 There are currently two continuous monitors operated by FDC located in Whittlesea, approximately 21km to the south-west of Wisbech. **Table 8B3.1 Fenland District Council continuous** monitors provides details of the monitoring sites, whilst **Table 8B3.2 Monitored exceedances of SO<sub>2</sub> AQOs** provides monitoring data collected between 2015 and 2019. The location of the monitoring sites is presented in ES **Figure 8.2 Local Authority Monitoring Locations (Volume 6.3)**.

**Table 8B3.1 Fenland District Council continuous monitors**

Site ID	Site location	Site type	X	Y	Pollutants
AM1	Park Lane	Urban Background	526382	296859	SO <sub>2</sub>
AM2	Bradley Fen	Industrial	523924	297974	SO <sub>2</sub>

**Table 8B3.2 Monitored exceedances of SO<sub>2</sub> AQOs**

Site ID	National objective	Number of exceedances				
		2015	2016	2017	2018	2019
AM1	15 minute average – 35 exceedances of 266µg m <sup>-3</sup> permitted	1	1	4	0	1



Site ID	National objective	Number of exceedances				
		2015	2016	2017	2018	2019
	Hourly average – 24 exceedances of 350µg m <sup>-3</sup> permitted	0	0	0	0	0
	Daily average – 3 exceedances of 125µg m <sup>-3</sup> permitted	0	0	0	0	0
<b>AM2</b>	15 minute average – 35 exceedances of 266µg m <sup>-3</sup> permitted	0	8	2	9	17
	Hourly average – 24 exceedances of 350µg m <sup>-3</sup> permitted	0	0	0	0	1
	Daily average – 3 exceedances of 125µg m <sup>-3</sup> permitted	0	0	0	0	0

### Passive monitoring

3.1.5 FDC undertake passive diffusion tube monitoring of NO<sub>2</sub> at 25 locations across the District. Details of the monitoring sites closest to the project components of the Proposed Development are included in **Table 8B3.3 Details of passive monitoring in Wisbech**, with data collected between 2015 and 2019 included in **Table 8B3.4 Monitored annual mean concentrations of NO<sub>2</sub>**. The location of the diffusion tube sites is presented in ES **Figure 8.2: Local Authority monitoring locations (Volume 6.3)**.

**Table 8B3.3 Details of passive monitoring in Wisbech**

Site ID	Site location	Site type	X	Y	In AQMA?	Distance to kerb (m)	Distance to site (km)
<b>S3</b>	Ramnoth	Kerbside	546857	308553	Y	1	1.38
<b>S5</b>	Bowthorpe	Kerbside	546414	309585	Y	2	1.74
<b>S8</b>	Westmead Avenue	Kerbside	546886	308366	Y	1	1.38
<b>S12</b>	AWS Road Lynn	Industrial	546588	310192	Y	N/A	2.38
<b>S13</b>	Lynn Road / Mt Pleasant	Roadside	546661	310396	Y	1	2.60
<b>S15</b>	Weasenham Lane JCN	Roadside	546828	308543	Y	2	1.35
<b>S16</b>	Lynn Road R'about	Roadside	546260	309987	Y	2	2.07



Site ID	Site location	Site type	X	Y	In AQMA?	Distance to kerb (m)	Distance to site (km)
S17	Weasenham / Cromwell	Roadside	545509	308731	N	2	0.71
S20	Napier	Roadside	546485	309389	Y	2	1.61

**Table 8B3.4 Monitored annual mean concentrations of NO<sub>2</sub>**

Site ID	Data capture 2018 (%)	Annual mean concentrations of NO <sub>2</sub> (µg m <sup>-3</sup> )				
		2015	2016	2017	2018	2019
S3	100	27.8	24.4	25.7	21.1	21.6
S5	100	33.4	35.4	35.7	28.2	30.1
S8	100	18.4	18.5	20.3	29.1	28.7
S12	100	16.7	16.1	16.1	14.8	16.6
S13	100	29.8	27.1	26.3	27.2	25.5
S15	100	34.9	34.4	33.7	29.7	30.3
S16	100	32.1	30.5	29.7	30.6	29.6
S17	92	19.2	20.3	20.4	17.6	18.9
S20	92	31.4	31.8	29.0	27.3	26.9

3.1.6 **Table 8B3.4 Monitored annual mean concentrations of NO<sub>2</sub>** shows annual mean concentrations of NO<sub>2</sub> were below the 40µg m<sup>-3</sup> related AQS at all monitoring locations in Wisbech between 2014 and 2019. Despite this, Wisbech AQMA No. 3 has not been revoked.

### *Monitoring survey results*

3.1.1 As agreed with CCC, air quality in the vicinity of the project components of the Proposed Development has been monitored using both diffusion tubes and a continuous monitor.

3.1.2 Diffusion tubes monitoring concentrations of NO<sub>2</sub> were installed in triplicate during October 2020 at thirteen locations as shown on ES, **Figure 8.1: Air quality survey monitoring locations (Volume 6.3)**.

3.1.3 Diffusion tubes, supplied and analysed by Gradko International, were exposed for a total period of 14 months. They were changed on a monthly basis every four to five weeks in line with the Defra Diffusion Tube Calendar. The analysis method was 50% TEA in water.





- 3.1.4 Additionally, an automatic monitor was installed at Thomas Clarkson Academy in July 2021 in a background location. A four-month co-location study was undertaken with a triplicate diffusion tube location (site 14) installed along the automatic monitor from August to November 2021. This collocation study was used to determine a diffusion tube adjustment factor of 0.69. Full details on diffusion tubes adjustment are presented in **Annex B Monitoring Survey** of this Appendix.
- 3.1.5 **Table 8B3.5 Details of Proposed Development monitoring locations** presents details of the selected monitoring locations and **Table 8B3.6 Proposed Development Monitoring Results for 2021** presents monitoring results for 2021. Full monthly monitoring results are presented in **Annex B: Monitoring Survey** of this Appendix.
- 3.1.6 In line with LAQM.TG(16), monitoring results with less than 75% of data capture were annualised using three nearby background automatic monitoring sites with a data capture above 85% for 2021. Full details on the annualisation process are presented in **Annex B: Monitoring Survey** of this Appendix.

**Table 8B3.5 Details of Proposed Development monitoring locations**

Site ID	Site location	Site type	X (m)	Y (m)	Height	In AQMA?	Distance to kerb (m)	Distance to EfW CHP Facility Site (km)
1	Thomas Clarkson Academy	Roadside	546612	308501	2.1	N	3.9	1.1
2	New Bridge Lane	Roadside	545331	307796	2.0	N	1.2	0.1
3	New Drove	Roadside	546453	308232	1.8	N	1.8	0.8
4	Cromwell Road	Roadside	545503	308691	1.9	N	1.2	0.6
5	Cromwell Road	Roadside	544979	307825	1.9	N	2.4	0.4
6	Wisbech Bypass	Suburban	545729	307468	1.7	N	15.0	0.4
7	Weasenham Lane	Roadside	546600	308401	1.9	N	1.6	1.0
8	Weasenham Lane	Roadside	546444	308355	1.9	N	0.8	0.9
9	Railway Road	Roadside	546215	308856	1.8	N	1.4	1.0



Site ID	Site location	Site type	X (m)	Y (m)	Height	In AQMA?	Distance to kerb (m)	Distance to EfW CHP Facility Site (km)
10	Algores Way	Roadside	546106	308390	2.0	N	1.6	0.6
11	Elm Road	High Roadside	547083	307871	1.8	N	2.3	1.4
12	Elm Road	High Roadside	546904	308258	1.9	N	5.5	1.3
13	Churchill Road	Roadside	546531	309265	1.7	Y	1.7	1.5
14 (collocated passive and automatic)	Thomas Clarkson Academy	Suburban	546350	308490	1.5	N	N/a	0.8

Table 8B3.6 Proposed Development Monitoring Results for 2021

Site ID	Type	Site location	2021 capture (%)	Data	2021 Bias adjusted and annualised average ( $\mu\text{g m}^{-3}$ )
1	Passive	Thomas Clarkson Academy	67%		9.6
2	Passive	New Bridge Lane	83%		8.6
3	Passive	New Drove	83%		8.7
4	Passive	Cromwell Road	83%		19.8
5	Passive	Cromwell Road	92%		18.2
6	Passive	Wisbech Bypass	92%		10.7
7	Passive	Weasenham Lane	92%		15.7
8	Passive	Weasenham Lane	92%		16.6
9	Passive	Railway Road	50%		11.8
10	Passive	Algores Way	92%		12.5



Site ID	Type	Site location	2021 capture (%)	Data	2021 Bias adjusted and annualised average ( $\mu\text{g m}^{-3}$ )
11	Passive	Elm High Road	92%		21.5
12	Passive	Elm High Road	92%		15.2
13	Passive	Churchill Road	75%		29.8
14	Passive	Thomas Clarkson Academy	33%		11.9
14	Automatic	Thomas Clarkson Academy	NO <sub>2</sub> : 58% PM <sub>10</sub> : 55% PM <sub>2.5</sub> : 54%		NO <sub>2</sub> : 11.3 PM <sub>10</sub> : 15.8 PM <sub>2.5</sub> : 9.9

### Estimated background concentrations

3.1.7 Defra has made estimates of background pollutant concentrations on a 1km<sup>2</sup> grid for the UK for seven of the main pollutants, including NO<sub>x</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. **Table 8B3.7 Defra mapped annual mean background concentrations for 2021** shows the estimated values of these pollutants for 2021 for the grid squares containing all project components.

**Table 8B3.7 Defra mapped annual mean background concentrations for 2021**

Pollutant	Concentration Range within the Study Area ( $\mu\text{g m}^{-3}$ )
NO <sub>x</sub>	7.4 – 18.6
NO <sub>2</sub>	5.8 – 13.6
PM <sub>10</sub>	14.2 – 16.3
PM <sub>2.5</sub>	8.7 – 9.9
CO	239 – 282
SO <sub>2</sub>	0.9 – 2.2

Note: Background concentrations of CO and SO<sub>2</sub> available for 2001 only.

### Hydrogen chloride (HCl)

3.1.8 Hydrogen chloride concentrations are routinely measured at 30 sites across the UK as part of the Acid Gas and Aerosol Network (AGANet). The closest monitoring site to the EfW CHP Facility Site, Access Improvements, CHP Connection, TCC and Water Connections is Stoke Ferry, approximately 25km to the south-east. The annual mean concentration of HCl in 2016, the year in which monitoring ceased at this location, was 0.21  $\mu\text{g m}^{-3}$ .



### Ammonia

3.1.9 Ammonia (NH<sub>3</sub>) is measured at 85 sites across the UK under the National Ammonia Monitoring Network (NAMN). The nearest monitoring locations to the project component with recorded 2021 annual mean concentrations of NH<sub>3</sub> are as follows:

- Stoke Ferry (28km south-east) – 0.77µg m<sup>-3</sup>;
- Pointon (38km north-west) – 1.20µg m<sup>-3</sup>;
- Monks Wood (39km south-west) – 1.37µg m<sup>-3</sup> and
- Stanford 2 (43km west) – 2.00µg m<sup>-3</sup>.

3.1.10 The monitoring result of Pointon in 2021 was not recorded and the result in 2020 is shown.

### Hydrogen fluoride

3.1.11 Hydrogen fluoride concentrations are not routinely measured in the UK. In heavily polluted urban areas, the World Health Organisation (WHO) report that total fluoride concentrations in air can reach 3µg m<sup>-3</sup> (WHO, 2000).

### Metals

3.1.12 Metal concentrations are measured in the UK by Defra under the Heavy Metals Network.

3.1.13 The closest monitoring site with recent data is Heigham Holmes, approximately 97km to the east of the EfW CHP Facility Site, that is associated with metal emissions. A summary of the monitoring data is detailed in **Table 8B3.8 2020 monitored metal concentrations at Heigham Holmes**.

**Table 8B3.8 2020 monitored metal concentrations at Heigham Holmes**

Metal	2020 Annual Mean Concentration (ng m <sup>-3</sup> )
Antimony	0.04
Arsenic	0.53
Cadmium	0.09
Chromium	0.46
Cobalt	0.04
Copper	1.49
Lead	3.12
Manganese	2.37



Metal	2020 Annual Mean Concentration (ng m <sup>-3</sup> )
Mercury	0.01
Nickel	0.49
Vanadium	0.97

3.1.14 The Heavy Metals Network monitors chromium concentrations as total Cr. EPAQS (Expert Panel on Air Quality Standards) report that ambient Cr(VI) concentrations may typically constitute 3-8% of total Cr. The higher value of this range was used to derive a Cr(VI) background concentration from the total monitored Cr.

### *PCDD/Fs*

3.1.15 In the UK, Defra's Toxic Organic Micropollutants (TOMPS) survey is the principal source of data on the measured concentrations of PCDD/Fs, dioxin-like PCBs and PAHs in ambient air at five locations (one urban background site and four rural background sites). The closest monitoring station to the Proposed Development is the rural background station High Muffles at approximately 195km distance.

3.1.16 The most recent (2010) annual mean dioxin PCDD/F data measured is 2.76 fg I-TEQ m<sup>-3</sup>.

### *PAHs*

3.1.17 PAHs are measured at 31 sites in the UK. The nearest urban background monitoring station to the Proposed Development which has recent data is Stoke Ferry, approximately 28km to the south-east of the Proposed Development. The 2020 monitored PAH concentration (as benzo[a]pyrene - B(a)P) was 0.06ng m<sup>-3</sup>.

### *PCBs*

3.1.18 In the UK, Defra's Toxic Organic Micropollutants (TOMPS) survey is the principal source of data on the measured concentrations of PCDD/Fs, dioxin-like PCBs and PAHs in ambient air at five locations (one urban background site and four rural background sites). The closest monitoring station to the EfW CHP Facility Site, CHP Connection, Access Improvements, TCC and Water Connections is the rural background station High Muffles approximately 195km distant.

3.1.19 The most recent (2018) annual mean dioxin PCBs data measured is 8.7 pg m<sup>-3</sup>.

### *Nitrogen and acid deposition rates*

3.1.20 The Air Pollution Information System provides background nitrogen and acid deposition rates specific to sensitive biodiversity sites. The deposition rates used in this assessment are detailed in **Table 8B3.9 Nitrogen and acid deposition rates.**



Table 8B3.9 Nitrogen and acid deposition rates

Sensitive ecological Receptor	Nitrogen deposition (kgN/ha/yr)	Acid deposition – nitrogen (keq N/ha/yr)	Acid deposition – sulphur (keq S/ha/yr)
Nene Washes SAC, SPA & Ramsar	17.6	1.3	0.2
Ouse washes SAC, SPA & Ramsar	15.3	1.1	0.1
River Nene CWS	16.8	1.2	0.2

### Grid Connection

3.1.21 Pollutant concentrations presented above are also representative of baseline conditions at the Grid Connection. The Defra background map data, as seen in **Table 8B3.7 Defra mapped annual mean background concentrations for 2021**, indicate that concentration of PM<sub>10</sub>, the main pollutant of concern from dust emissions during construction, are comfortably below the relevant AQOs.

### Future baseline

3.1.22 This section summarises how the current baseline is predicted to change between now and the expected first year of operation in the absence of the Proposed Development.

### EfW CHP Facility Site, Access Improvements, CHP Connection, TCC and Water Connections

3.1.23 In the absence of the EfW CHP Facility, Access Improvements, CHP Connection and TCC and Water Connections, it is expected there would be a gradual decline in current baseline concentrations recorded as a result of expected improvements in air quality, such as the Government's Clean Air Strategy objectives being implemented, improvements in real world emissions performance of road vehicles and more stringent emission limits for industrial sources as environmental permits are updated in a phased manner to bring them in line with the requirements of the Industrial Emissions Directive. As the anticipated improvements are not guaranteed, as a worst-case approach, such anticipated reductions are not reflected in the future baseline and a baseline year background concentrations has been used for all model scenarios.

### Grid Connection

3.1.24 The future baseline of the EfW CHP Facility, CHP Connection, TCC and Access Improvements, described above, is also applicable to the Grid Connection.

## 3.2 Baseline used in the assessment

3.2.1 **Table 8B3.10 Baseline used in the assessment** presents a summary of the baseline used in the assessment.



Table 8B3.10 Baseline used in the assessment

Pollutant	Source
NO <sub>2</sub>	2021 Defra background concentrations and monitoring survey data where applicable (i.e., Receptors along the road network included in the traffic model)
SO <sub>2</sub>	2001 Defra background concentrations
PM <sub>10</sub>	2021 Defra background concentrations
PM <sub>2.5</sub>	2021 Defra background concentrations
CO	2001 Defra background concentrations
NH <sub>3</sub>	National Ammonia Monitoring Network (NAMN) – Stanford 2
HCL	Acid Gas and Aerosol Network (AGANet) - Stoke Ferry
PAHs	Acid Gas and Aerosol Network (AGANet) - Stoke Ferry
HF	World Health Organisation (WHO) report <sup>1</sup>
Metals	Heavy Metals Network. - Heigham Holmes
PCBs/PCDD/F	UK, Defra's Toxic Organic Micropollutants (TOMPS) survey

<sup>1</sup> World Health Organisation (2000) Air Quality Guidelines. Available at: [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0005/74732/E71922.pdf](https://www.euro.who.int/__data/assets/pdf_file/0005/74732/E71922.pdf)



## 4. Chimney emissions methodology

### 4.1 The Dispersion model

4.1.1 There are two primary dispersion models which have been used extensively throughout the UK for developments of this nature and accepted as appropriate air quality modelling tools by the Regulators and local planning authorities alike:

- The ADMS model, developed in the UK by Cambridge Environmental Research Consultants (CERC) in collaboration with the Met Office, National Power and the University of Surrey; and
- The AERMOD model, developed in the United States by the American Meteorological Society (AMS)/United States Environmental Protection Agency (EPA) Regulatory Model Improvement Committee (AERMIC).

4.1.2 Both models are termed 'new generation' models, parameterising stability and turbulence in the planetary boundary layer (PBL) by the Monin-Obukhov length and the boundary layer depth. This approach allows the vertical structure of the PBL to be more accurately defined than by the stability classification methods of earlier dispersion models. Like these earlier models, ADMS and AERMOD adopt a symmetrical Gaussian profile of the concentration distribution in the vertical and crosswind directions in neutral and stable conditions. However, unlike these earlier models, the ADMS and AERMOD vertical concentration profile in convective conditions adopts a skewed Gaussian distribution to take account of the heterogeneous nature of the vertical velocity distribution in the Convective Boundary Layer (CBL).

4.1.3 Numerous model inter-comparison studies have demonstrated little difference between the output of ADMS and AERMOD, except in certain scenarios (Carruthers et al., 2011). For the purposes of this study, the use of ADMS model is proposed with sensitivity analysis undertaken with the AERMOD model. The justification for this selection is provided below.

4.1.4 ADMS can calculate sub-hourly averaged concentrations based on site-specific meteorological and surface conditions, whereas AERMOD can only produce output down to hourly-averaged values. Therefore, to enable an assessment of impact against the 15-minute mean SO<sub>2</sub> air quality objective (AQO), a standard conversion factor (1.34) must be applied to the hourly output from AERMOD to estimate 15-minute mean concentrations. This factor is taken from Turner (1994) who published estimated ratios of calculated peak and mean concentrations at 3 minutes, 15-minutes, 1-hour, 3-hours and 24-hours from published data on lateral and vertical diffusion co-efficient in steady winds as reported by Nonhebel (1960). What is important to note here is that these estimates were based upon calculated dispersion coefficients, rather than monitoring results. Furthermore, Turner (1994) cautions that:

*"...ratios of peak to mean data depend also on the stability of the atmosphere and the type of terrain that the plume is passing over."*





- 4.1.5 Therefore, application of a standard, non-site-specific conversion factor that does not have its basis in monitored data would significantly increase the uncertainty in modelled 15-minute mean values obtained from AERMOD. This limitation is not present in ADMS, which uses site specific meteorological and surface conditions to directly calculate sub-hourly averaged concentrations.
- 4.1.6 However, sensitivity analysis was undertaken using AERMOD to understand the potential uncertainty in model predictions. The latest release codes of ADMS and AERMOD available when the assessment is undertaken were used. A summary of the sensitivity tests is presented in **Annex F Model Sensitivity Tests**.

## 4.2 Process emissions and operational scenarios

### Normal operation

- 4.2.1 Operation of and emissions from the chimneys of the EfW CHP Facility will be regulated by an environmental permit issued by the EA under the Environmental Permitting (England and Wales) Regulations 2016, as amended (the 'EPR'). The EPR transpose the requirements of Directive 2010/75/EU (the Industrial Emissions Directive, or IED)<sup>2</sup> into domestic legislation.
- 4.2.2 Operators of activities listed in Annex I of the IED are required to apply for a permit to operate their installation to the relevant Competent Authority (the 'Regulator'). Regulators must set conditions in this permit to achieve a high level of protection for the environment based on the use of best available techniques (BAT).
- 4.2.3 Specific permit considerations for EfW facilities are detailed in Chapter IV and Annex VI of the IED. Annex VI sets emission limit values (ELVs) and monitoring requirements for point source (stack) emissions which must be met during normal plant operation. Article 14(3) of the IED establishes that the BAT Conclusions shall be the reference for setting permit conditions, whilst Article 15(3) establishes that Regulators should set limits on emissions that do not exceed emission levels associated with BAT. These BAT Associated Emission Levels (BAT-AELs) are established by the European Commission in a series of sectoral BAT Reference (BREF) documents, with the BAT-AELs subsequently introduced into legislation by way of a Commission Implementing Decision. The Implementing Decision setting the BAT-AELs for EfW plants was introduced on 12 November 2019<sup>3</sup>.
- 4.2.4 Importantly, the BAT-AELs do not repeal the Annex VI ELVs and both work in partnership to regulate emissions from EfW plants. As such, the BAT-AELs and Annex VI ELVs formed the basis for establishing relevant emission parameters associated with the chimneys of the EfW CHP Facility. The BAT-AELs are expressed as a range and, as a conservative measure, it is assumed that the EfW CHP Facility operates at the upper range of the BAT-AEL for the relevant pollutant.
- 4.2.5 The assessment assumes that the plant is emitting at the emission concentrations in **Table 8B4.2 Emission Concentrations** and at maximum waste throughput continually for 24-hours a day, 365-days a year. This provides a conservative

<sup>2</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0075#d1e32-67-1>

<sup>3</sup> Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration



estimate of annual mean impacts. For the purposes of assessing longer-term impacts, i.e., those air quality standards (AQS) that have averaging periods of 24-hours or greater, the daily averaged emission concentrations in **Table 8B4.2 Emission Concentrations** are applied. For pollutants with AQS averaging periods less than 24-hours, the half-hourly averaged emission concentrations are used.

4.2.6 There are certain pollutants discharged from EfW plants that do not have prescribed ELVs or BAT-AELs, but which are potentially harmful to human health above certain concentrations. These include PCBs and polycyclic aromatic hydrocarbons (PAHs). Emissions of PCBs and PAHs, therefore, were calculated using monitored data from M&V's Devonport operational EfW CHP Facility.

4.2.7 The AQS for particulate matter (**Table 8B2.4 Air Quality Standards, Objectives and Environmental Assessment Levels**) are established for particulate matter less than 10  $\mu\text{m}$  ( $\text{PM}_{10}$ ) and particulate matter less than 2.5- $\mu\text{m}$  ( $\text{PM}_{2.5}$ ) whereas the BAT-AEL and ELV is established for dust or total particulate matter. In the absence of particle size distribution data, the assessment assumes, conservatively, that all particulate matter is emitted in the  $\text{PM}_{2.5}$  fraction.

4.2.8 Similarly, given that the speciation of VOCs and PAHs is not known, in accordance with Environment Agency's *Air emissions risk assessment for your environmental permit* guidance<sup>4</sup>, it is assumed that all VOCs are emitted as benzene and compared against the benzene AQS, whilst it is assumed that all PAHs are benzo(a)pyrene (B(a)P) for comparison against the B(a)P Environmental Assessment Level (EAL).

4.2.9 In summary, the pollutants covered by the assessment of chimney emissions include:

- Oxides of nitrogen ( $\text{NO}_x$  as nitrogen dioxide ( $\text{NO}_2$ ));
- Particulate matter ( $\text{PM}_{10}$  and  $\text{PM}_{2.5}$ );
- Carbon monoxide (CO);
- Sulphur dioxide ( $\text{SO}_2$ );
- Hydrogen chloride (HCl);
- Hydrogen fluoride (HF);
- Group 1 metals (cadmium (Cd) and thallium (Tl));
- Group 2 metals (mercury (Hg));
- Group 3 metals (antimony (Sb), arsenic (As), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), nickel, (Ni) and vanadium (V));
- Volatile organic compounds (VOCs) as benzene;
- Ammonia ( $\text{NH}_3$ );
- Polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans (PCDD/Fs) and dioxin-like polychlorinated biphenyls (PCBs);

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<sup>4</sup> <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>



- Polychlorinated biphenyls (PCBs); and
- Polycyclic aromatic hydrocarbons (PAHs) as B(a)P.

4.2.10 **Table 8B4.1 Chimney parameters** and **Table 8B4.2 Emission Concentrations** provide the modelled physical and process emission parameters for the chimneys, respectively.

**Table 8B4.1 Chimney parameters**

	Chimney1	Chimney 2
Coordinates	545495,307893	545499,307889
Chimney height (m)*	84	84
Chimney diameter (m)	2.61	2.61
Temperature	150	150
Minimum velocity (m s <sup>-1</sup> )	17	17
Volumetric flow rate — long-term (m <sup>3</sup> s <sup>-1</sup> )	90.8	90.8
Actual oxygen (%)	8	8
Actual moisture (%)	18.4	18.4

Note: \*As determined by chimney height assessment

4.2.11 The assessment has assumed that the plant is emitting at the emission concentrations in **Table 8B4.2 Emission Concentrations** and at a maximum waste throughput continually for 24-hours a day, 365-days a year as a conservative approach.

**Table 8B4.2 Emission Concentrations**

Pollutant	Emission concentration (mg Nm <sup>-3</sup> unless stated) <sup>A</sup>		Emission rate (g s <sup>-1</sup> )	
	Daily average or over sampling period	Half-hourly average for 100% compliance	Long-term	Short-Term
Oxides of nitrogen (NO <sub>x</sub> )	120 <sup>B</sup>	400 <sup>C</sup>	7.46	24.86
Dust	5 <sup>B</sup>	30 <sup>C</sup>	0.31	1.86
VOCs (as benzene)	10 <sup>B</sup>	20 <sup>C</sup>	0.62	1.24



Pollutant	Emission concentration (mg Nm <sup>-3</sup> unless stated) <sup>A</sup>		Emission rate (g s <sup>-1</sup> )	
	Daily average or over sampling period	Half-hourly average for 100% compliance	Long-term	Short-Term
Hydrogen chloride	6 <sup>B</sup>	60 <sup>C</sup>	0.37	3.73
Hydrogen fluoride	1 <sup>B</sup>	4 <sup>C</sup>	0.06	0.25
Carbon monoxide (CO)	50 <sup>B</sup>	100 <sup>C</sup>	3.11	6.22
Sulphur dioxide (SO <sub>2</sub> )	30 <sup>B</sup>	200 <sup>C</sup>	1.86	12.43
Ammonia (NH <sub>3</sub> )	10 <sup>B</sup>	-	0.62	-
Cadmium and thallium	0.02 <sup>B</sup>	-	0.001	-
Mercury	0.02 <sup>B</sup>	-	0.001	-
Antimony, arsenic, lead, chromium, cobalt, copper, manganese, nickel, vanadium and their compounds	0.03 <sup>B</sup>	-	0.002	-
PAHs <sup>D</sup>	0.0047	-	2.9 x10 <sup>-4</sup>	-
PCBs <sup>D</sup>	3.9 x 10 <sup>9</sup> (WHO-TEQ)	3.9 x 10 <sup>9</sup> (WHO-TEQ)	2.4 x10 <sup>-10</sup>	2.4 x10 <sup>-10</sup>
Polychlorinated dibenzo-p-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs) and dioxin-like polychlorinated biphenyls (PCBs)	0.08 ng m <sup>-3</sup> (WHO-TEQ)	-	4.97*10 <sup>-9</sup>	-

Note: <sup>A</sup> At reference conditions of 273K, 101.3kPa, 11 % O<sub>2</sub>, dry gas; <sup>B</sup> BAT-AEL; <sup>C</sup> Annex VI ELV; <sup>D</sup> Calculated from MVV Devonport monitoring data. An additional 'safety factor' of 10 has been applied.

## Abnormal operation

### Chimney emissions

4.2.12 Article 46(6) of the IED allows ELVs to be exceeded for no more than 4 hours uninterrupted and up to 60-hours per annum. In such scenarios, Annex VI, Part 3, Paragraph 2 specifies that the CO and TOC in **Table 8B2.3 Summary of the pollutants assessed** must not be exceeded and TPM concentrations must not



exceed 150mg Nm<sup>-3</sup>. However, for other pollutants, specific limits during abnormal operation are not provided.

4.2.13 For those other pollutants, consideration of the short-term impacts on air quality during abnormal operating conditions are made assuming theoretical failures in the following flue gas treatment (FGT) infrastructure:

- Failure of a filter bag (affecting particulate matter and metal emissions);
- Failure of the lime dosing system (affecting emissions of acid gases, including SO<sub>2</sub>, HF and HCl); and
- Failure of the urea dosing system (affecting emissions of NO<sub>x</sub>).

4.2.14 Where limits not to be exceeded under Article 46(6) are not provided, emission rates from the chimneys during abnormal operation have been derived from those occurring during normal operation based on the efficiency of the FGT measures:

$$ER_{ab} = \frac{ER_{norm}}{1 - \epsilon}$$

Where:

$ER_{ab}$  = emission rate during abnormal operation

$ER_{norm}$  = emission rate during normal operation

$\epsilon$  = FGT efficiency (fractional basis) for specific pollutant

4.2.15 Emission rates during abnormal operation were derived assuming the FGT plant achieves the following abatement efficiencies:

- SNCR (NO<sub>x</sub> control) – 50% (i.e., NO<sub>x</sub> emission rates would increase by a factor of 2 during abnormal operation);
- Dry scrubbing (acid gas control) – 90% (i.e., acid gas emission rates would increase by a factor during abnormal operation, HCl: 200, HF: 15 and SO<sub>2</sub>: 5); and
- Emissions of metals were pro-rated based on the permitted increase in the dust ELV during abnormal conditions as established under Annex VI, Part 3, Paragraph 2 of the IED.

4.2.16 Should the Continuous Emissions Monitoring System (CEMS) installed on the chimneys detect continued exceedances of the ELVs, an automatic interlock will prevent further waste being charged. As the controls in place will minimise any time spent in exceedance to less than 4-hours, only those pollutants with an AQS/AQO/EAL averaging period of 1-hour are considered.

4.2.17 Other theoretical failures which may result in abnormal emissions might include a local power failure to the secondary combustion air system. This would immediately initiate a controlled shutdown of the plant with an interlock preventing further waste being charged. However, emissions may continue to occur for a short period of time from residual combustion of waste already on the grate. The failure of the secondary combustion air system would reduce the complete oxidation of gases produced in the primary combustion zone, which would most likely manifest by way of increased



production of CO and TOC emissions in preference to CO<sub>2</sub> without further control measures.

- 4.2.18 However, in relation to Article 46(6), Annex VI, Part 3, Paragraph 2 specifies that the CO and TOC ELVs must not be exceeded during any operational scenario and the plant design must ensure this requirement is met in full as a condition of the Environmental Permit. This could be achieved by increasing primary combustion air and increasing the carbon injection rate, for example. CO and TOC emissions would, therefore, be no higher in this scenario than those already assumed as part of the normal operation assessment.

### Odour emissions

- 4.2.19 During normal operation, waste odours are contained within the main building by maintaining negative internal air pressure within the tipping hall and waste bunker. Air from the tipping hall and waste bunker is drawn into the primary combustion air system and used as under fire air in the combustion plant, which ensures the removal and destruction of odorous compounds. Shutdown of each furnace will be staggered where possible. During periods of maintenance or repair, when both furnaces are not operating, the air from the ventilation system would be passed through the dust and activated carbon filters of the shutdown exhaust system before being emitted into the atmosphere and/or a permanently installed odour neutralisation spray system will be deployed to neutralise odours. The system and management procedures employed will comply with the requirements of the Environmental Permit to demonstrate Best Available Techniques (BAT).
- 4.2.20 The extraction system will discharge the treated air via a vent on top of the building. The emission information of filtration system is shown in **Table 8B4.4 Modelled characteristics for emergency diesel generator activated carbon and dust filtration system.**

**Table 8B4.3 Modelled characteristics for activated carbon and dust filtration system**

Parameter	Activated carbon and dust filtration system
Release height (m)	52
Diameter (m)	2
Efflux velocity (m s <sup>-1</sup> )	15.4
Volumetric flow (m <sup>3</sup> s <sup>-3</sup> )	48.27
Efflux temperature (°C)	25
Odour concentration (ou <sub>E</sub> m <sup>-3</sup> )	3000
Odour release rate (ou <sub>E</sub> s <sup>-1</sup> )	133,333



## Emergency scenario

4.2.21 An emergency diesel generator is provided to shut down the plant safely in the event of total power loss (failure of the Grid Connection coinciding with failure of the turbine generator). A 3 MVA containerised generator is proposed for the site, however no detailed design is available at the time of writing. The diesel generator is expected to operate 1 – 2-hours as the power is normally restored within 2 hours. The emission information for the diesel generator is shown in **Table 8B4.4 Modelled characteristics for emergency diesel generator** and has been derived from the technical data for a generator of a similar size to the one proposed, and information provided by the Applicant on the location and the height of the generator chimney. The combined short-term emission of NO<sub>x</sub> from the chimneys and the diesel generator has been modelled.

**Table 8B4.4 Modelled characteristics for emergency diesel generator**

Parameter	Emergency Diesel generator
Release height (m)	7
Diameter (m)	0.35
Volumetric flow (m <sup>3</sup> s <sup>-3</sup> )	6.52
Efflux temperature (°C)	410
Emission of NO <sub>x</sub> (g s <sup>-1</sup> )	2.9
Emission of CO (g s <sup>-1</sup> )	2.1
Emission of SO <sub>2</sub> (g s <sup>-1</sup> )	0.15
Emission of PM (g s <sup>-1</sup> )	0.08

## Emission of ultrafine particles

4.2.22 Ultrafine particles (UFP) are generally defined as those with an aerodynamic diameter less than 0.1-µm, or PM<sub>0.1</sub>. Emissions of UFP have frequently been cited as a concern of opponents to EfW development due to their ability to penetrate deeply into the lungs and, thus, represent a greater risk to health than larger diameter particles.

4.2.23 There are no statutory standards or non-statutory guideline levels established to enable an assessment of UFPs. However, the effects of UFP emissions from the EfW CHP Facility chimney are not expected to be significant and will not be subject to additional specific assessment for the reasons cited below.

- The BAT-AEL and IED Annex VI ELV for particulate matter is applicable to total particulate matter, i.e., it includes all particle sizes, even UFP. As such, although there is no explicit emission limit for UFP, their emission is still controlled by the limits set for total particulate matter.



- Emissions from another MVV operated EfW CHP Facility in the UK demonstrates that the installed fabric filter system (which would also be implemented for the Proposed Development or an equivalent) is an effective measure for controlling emissions of particulate matter. Continuous monitoring data from this plant<sup>5</sup> indicates total particulate emissions are typically less than 0.1mg Nm<sup>-3</sup>. This is less than 2% of the BAT-AEL that would apply to chimney emissions from the Proposed Development.
- Concerns over the ability of fabric filters, such as those to be implemented as part of the FGT system of the Proposed Development to capture UFPs are often expressed by opponents to EfW facilities. However, a study by Buonanno et al. (2011)<sup>6</sup> demonstrated that, in an operating EfW plant in Italy, more than 99.99% of UFPs were removed by the fabric filter. In addition, the concentration of particles measured at the chimney was about 10 times lower than the concentration of particles measured in the surrounding area, which was a rural location, i.e., the UFP concentration in the chimney emission was lower than the typical background concentration. In a separate study of fine and ultrafine particles on the surface of foodstuffs in Italy, the authors concluded that “*little evidence is found for particles whose origin could be attributed to industrial combustion processes, such as waste incineration*” (Giordano et al., 2011)<sup>7</sup>

## 4.3 Meteorology

- 4.3.1 For meteorological data to be suitable for dispersion modelling purposes, a number of meteorological parameters need to be measured on an hourly basis. These parameters include wind speed, wind direction, cloud cover and temperature. There are only a limited number of sites where the required meteorological measurements are made. The year of meteorological data that is used for a modelling assessment can also have a significant effect on ground level concentrations.
- 4.3.2 The nearest synoptic weather station that provides model-quality monitored meteorological data is located at RAF Marham, approximately 27km to the east of Wisbech. Due to this distance, data from this station may not necessarily be representative of conditions within Wisbech. As such, the assessment used 5 years of hourly sequential meteorological data from the Met Office’s Numerical Weather Prediction (NWP) model interpolated for the specific location of the EfW CHP Facility Site.
- 4.3.3 NWP models, such as the Unified Model, are now used operationally by the Met Office for weather forecasting and to model climate change. These models are run on large supercomputers and input observations from ground stations, buoys at sea, radiosondes, aircraft, and satellites. The models integrate the governing equations forward in time to move from a current view of the weather to some future state (the “Forecast”). The starting point of NWP forecasts is a set of data (the “Analysis”) that

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<sup>5</sup> <https://www.mvv.de/en/about-us/group-of-companies/mvv-umwelt/shareholdings/mvv-environment-ltd/devonport-efw-chp-facility/links-and-downloads>

<sup>6</sup> Buonanno, G., Stabile, L., Avino, P., Belluso, E. (2011) ‘Chemical, dimensional and morphological ultrafine particle characterization from a waste-to-energy plant’. Waste Management, 31, 2253–2262.

<sup>7</sup> Giordano C, Bardi U, Garbini D, Suman M, “Analysis of particulate pollution on foodstuff and other items by environmental scanning electron microscopy,” Microsc Res Tech, 74(10), 931-935





combines the currently available observations measured all over the globe with an initial state taken from the previous NWP model run.

- 4.3.4 Versions of the Unified Model include the global and mesoscale models. These cover various domains and grid resolutions. The mesoscale model covers a limited area focused on the UK. In 2006, the North-Atlantic & European (NAE) model replaced the mesoscale model. It covers a larger area but has the same resolution as the immediately preceding version of the mesoscale model.
- 4.3.5 When generating data suitable for the ADMS model, the NWP Analysis data for the chosen year from the UM mesoscale model is retrieved from storage and then processed using multi-linear interpolation in all 4 dimensions to resolve the effective values of each variable at the station position (latitude & longitude). The raw NWP data are, strictly speaking, analysis data at each assimilation step in the mesoscale model run, mixed with forecast data for the intervening hours. Data before 2004 is interpolated from older versions of the UM mesoscale model with a 60km resolution, whilst data from 2004 to 2006 is interpolated from a finer 12km resolution version of the UM NAE model. From 2007 to 2012, model resolution increased to a 4km level whilst, from 2013 onwards, model resolution is at 1.5km.
- 4.3.6 Interpolated NWP data during the period 2015-2019 will be used in the assessment of chimney emissions. These data are interpolated from a version of the UM NAE model with 1.5km grid resolution.
- 4.3.7 Previous discussion with Environmental Health Officers of FDC suggests some recent applications have supported their air quality assessments with data from a local non-Met Office or World Meteorological Organization weather station<sup>8</sup>. At the present time, the suitability of this station in providing data that would meet the quality standard for data used in modelling assessments is not known. As a result, the assessment has utilised the NWP data.

## 4.4 Surface characteristics

- 4.4.1 The predominant surface characteristics and land use in a model domain have an important influence in determining turbulent fluxes and, hence, the stability of the boundary layer and atmospheric dispersion. Factors pertinent to this determination are detailed below.

### Surface roughness

- 4.4.2 The surface roughness length,  $z_0$ , represents the aerodynamic effects of surface friction and is defined as the height at which the extrapolated surface layer wind profile tends to zero. This value is an important parameter used by meteorological pre-processors to interpret the vertical profile of wind speed and estimate friction velocities which are, in turn, used to define heat and momentum fluxes and, consequently, the degree of turbulent mixing.
- 4.4.3 The surface roughness length is related to the height of surface elements; typically, the surface roughness length is approximately 10% of the height of the main surface

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<sup>8</sup> Skype meeting on 2 April 2020 between EHOs or air quality advisors of Fenland District Council, the Borough Council of King's Lynn & West Norfolk and Cambridgeshire County Council



features. Thus, it follows that surface roughness is higher in urban and congested areas than in rural and open areas. Oke (1987)<sup>9</sup> and CERC (2019)<sup>10</sup> suggest typical roughness lengths for various land use categories (**Table 8B4.5 Typical surface roughness lengths for various land use categories**).

**Table 8B4.5 Typical surface roughness lengths for various land use categories**

Type of surface	Z <sub>0</sub> (m)
Ice	0.00001
Smooth snow	0.00005
Smooth sea	0.0002
Lawn grass	0.01
Pasture	0.2
Isolated settlement (farms, trees, hedges)	0.4
Parkland, woodlands, villages, open suburbia	0.5-1.0
Forests/cities/industrialised areas	1.0-1.5
Heavily industrialised areas	1.5-2.0

4.4.4 Increasing surface roughness increases turbulent mixing in the boundary layer. With respect to elevated sources under neutral and stable conditions, increasing the roughness length can have complex and conflicting effects on ground level concentrations:

- The increased mixing can bring portions of an elevated plume down towards ground level, resulting in increased ground level concentrations close to the emission source; and
- The increased mixing increases entrainment of ambient air into the plume and dilutes plume concentrations, resulting in reduced ground level concentrations further downwind from an emission source.

4.4.5 The overall impact on ground level concentration is, therefore, strongly correlated to the distance of a Receptor from the emission source.

## Surface energy budget

4.4.6 One of the key factors governing the generation of convective turbulence is the magnitude of the surface sensible heat flux. This, in turn, is a factor of the incoming solar radiation. However, not all solar radiation arriving at the Earth's surface is

<sup>9</sup> Oke (1987). 'Boundary Layer Climates'.

<sup>10</sup> CERC (2014). 'The Met Input Module'



available to be emitted back to atmosphere in the form of sensible heat. By adopting a surface energy budget approach, it can be identified that, for fixed values of incoming short and long wave solar radiation, the surface sensible heat flux is inversely proportional to the surface albedo and latent heat flux.

4.4.7 The surface albedo is a measure of the fraction of incoming short-wave solar radiation reflected by the Earth's surface. This parameter is dependent upon surface characteristics and varies throughout the year. Oke (1987) recommends average surface albedo values of 0.6 for snow covered ground and 0.23 for non-snow covered ground, respectively.

4.4.8 The latent heat flux is dependent upon the amount of moisture present at the surface. Areas where moisture availability is greater will experience a greater proportion of incoming solar radiation released back to atmosphere in the form of latent heat, leaving less available in the form of sensible heat and, thus, decreasing convective turbulence. The modified Priestly-Taylor parameter ( $\alpha$ ) can be used to represent the amount of moisture available for evaporation. Holstag and van Ulden (1983)<sup>11</sup> suggest values of 0.45 and 1.0 for dry grassland and moist grassland respectively.

### Selection of appropriate surface characteristic parameters for the site

4.4.9 A detailed analysis of the effects of surface characteristics on ground level concentrations by Auld *et al.* (2002)<sup>12</sup> led them to conclude that, with respect to uncertainty in model predictions:

4.4.10 *"...the energy budget calculations had relatively little impact on the overall uncertainty"*.

4.4.11 In this regard, it is not considered necessary to vary the surface energy budget parameters spatially or temporally, and annual averaged values have been adopted throughout the model domain for this assessment.

4.4.12 As snow covered ground is only likely to be present for a small fraction of the year, the surface albedo of 0.23 for non-snow covered ground advocated by Oke (1987) has been used whilst the model default  $\alpha$  value of 1.0 has also been retained.

4.4.13 A variable roughness file will be used to reflect the land use in the area surrounding the Proposed Development. Nevertheless, a sensitivity test of variable roughness was completed and presented in **Annex F Model Sensitivity Tests**.

## 4.5 Buildings

4.5.1 Any large object has an impact on atmospheric flow and air turbulence within the locality of the object. This can result in maximum ground level concentrations that are significantly different (generally higher) from those encountered in the absence of buildings. The building 'zone of influence' is generally regarded as extending a distance of 5L (where L is the lesser of the building height or width) from the foot of

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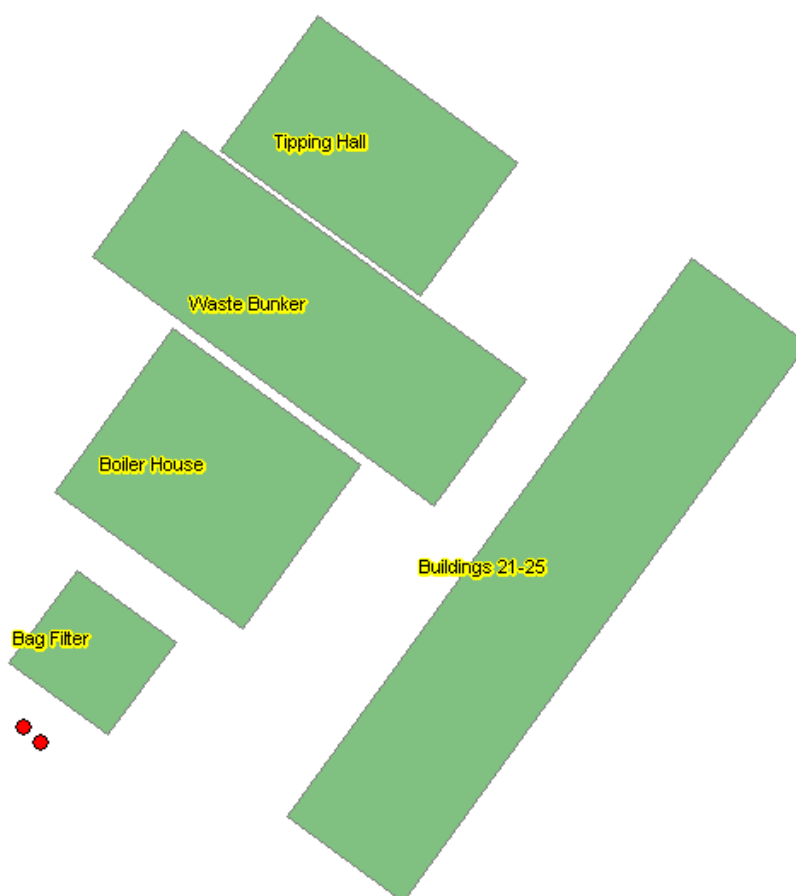
<sup>11</sup> van Ulden and Holstag (1983). 'The Stability of the Atmospheric Surface Layer during Nighttime'. American Met. Soc., 6th Symposium on Turbulence and Diffusion.

<sup>12</sup> Auld *et al.* (2002). 'Uncertainty in Deriving Dispersion Parameters from Meteorological Data'. Atmospheric Dispersion Modelling Liaison Committee (ADMLC). Annual Report 2002-2003.



the building in the horizontal plane and three times the height of the building in the vertical plane. Building locations and dimensions detailed in **Table 8B4.6 Buildings model inputs** that have been simplified, considering the limitations of the ADMS 5 dispersion model when considering downwash effects. Note that all building were modelled with an angle of 36° and therefore for the boiler house, waste banker and tipping hall lengths correspond to the widths presented in **Chapter 3 Description of the Development (Volume 6.2)**. **Graphic 8B4.1 Modelled buildings** presents the buildings included in the model.

**Graphic 8B4.1 Modelled buildings**



**Table 8B4.6 Buildings model inputs**

ID	Location X(m)	Location Y(m)	Height HB(m)	Width(m)	Length(m)	Angle (°)
Boiler house	545538	307952	50	55	48	36
Bag filter houses	545511	307911	26	29	27	36



ID	Location X(m)	Location Y(m)	Height HB(m)	Width(m)	Length(m)	Angle (°)
Waste bunker building	545562	307990	37	100	37	36
Tipping hall	545577	308028	17	59	39	36
Buildings 21-25	545619	307928	37	34	163	36

4.5.2 Dispersion modelling was carried out both with and without the impacts of onsite buildings as a sensitivity test (**Annex F Model Sensitivity Tests**).

## Terrain

4.5.3 The concentrations of pollutants emitted in areas of complex terrain differ from those found in simple, level terrain due to a number of topographical induced effects on the flow and turbulent fields. These effects are most pronounced when terrain gradients exceed 1 in 10. The terrain in the vicinity of the Proposed Development is relatively flat with a maximum change in elevation of approximately 5m over 10km. Therefore, it is not considered necessary to include terrain effects in the dispersion model.

## 4.6 Modelled domain and Receptors

### Modelled domain

4.6.1 A Cartesian grid centred on the site was modelled to assess the impact of atmospheric emissions from the EfW CHP Facility on local air quality. It is generally accepted best practice guidance to adopt a model domain with a Receptor resolution less than 1.5 times the chimney height. The grid resolution used in the model is 40m.

### Human Receptors

4.6.2 Guidance from Defra in LAQM.TG(16)<sup>13</sup> establishes that exceedances of the human health-based objectives should only be assessed at outdoor locations where members of the general public are regularly present over the averaging time of the objective. **Table 8B4.7 Typical examples of relevant exposure for different averaging periods** provides an indication of those locations that may be relevant for different averaging periods.

<sup>13</sup> Defra (2016) Local Air Quality Management Technical Guidance (LAQM.TG(16)).



Table 8B4.7 Typical examples of relevant exposure for different averaging periods

Averaging period	Objectives should apply	Objectives should not apply
<b>Annual mean</b>	<p>All locations where members of the public might be regularly exposed.</p> <p>Building facades of residential properties, schools, hospitals, care homes etc.</p>	<p>Building facades of offices or other places of work where members of the public do not have regular access.</p> <p>Hotels, unless people live there as their permanent residence.</p> <p>Gardens of residential properties.</p> <p>Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.</p>
<b>24-hour mean, and 8-hour mean</b>	<p>All locations where the annual mean objectives would apply, together with hotels.</p> <p>Gardens of residential properties.</p>	<p>Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.</p>
<b>1-hour mean</b>	<p>All locations where the annual mean and 24 and 8-hour mean objectives would apply.</p> <p>Kerbside sites (e.g., pavements of busy shopping streets).</p> <p>Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where the public might reasonably be expected to spend one hour or more.</p> <p>Any outdoor locations at which the public may be expected to spend one hour or longer.</p>	<p>Kerbside sites where the public would not be expected to have regular access.</p>
<b>15-min mean</b>	<p>All locations where members of the public might reasonably be expected to spend a period of 15 minutes or longer.</p>	

Table note: directly extracted from LAQM.TG(16)

- 4.6.3 The human Receptors included in the assessment for the purposes of assessing point source and road traffic emissions have been selected based on the above guidance by identifying places where people may be located, judged in terms of the likely duration of their exposure to pollutants, and proximity to the Proposed Development based upon experience and professional judgement.
- 4.6.4 These human Receptor locations are displayed in ES **Figure 8.3 Modelled Receptors (Volume 6.3)** and include residential properties, schools (including, but not limited to, TBAP Unity Academy and Thomas Clarkson Academy), residential care homes, hospitals, places of worship etc. It should be noted that this list of Receptors is by no means exhaustive, with certain Receptors grouped together to



represent exposure over a wider area, rather than at specific residential properties, for example.

- 4.6.5 There are several Receptors on the adjacent business park and industrial estate where there is no fixed habitation but where members of the general public (i.e., excluding the workforce) may be present for short periods of time. Such Receptors would include schools, gyms, restaurants and cinemas, for example. Potential short-term air quality impacts, i.e., the impact from those pollutants with an AQS averaging period of 1 hour or less, at these locations are assessed with reference to the outputs from the gridded concentration data produced by the dispersion model. Long-term impacts are not considered at these Receptors as members of the public would be unlikely to be present over the full duration of the AQS averaging period at such locations.
- 4.6.6 Model predictions at human Receptors were made at a height of 1.5m above ground level, representative of the typical breathing zone height. The initial proposed Receptors were reviewed once an initial model run to determine the likely plume footprint and location of maximum impact had been undertaken.
- 4.6.7 Details of all Receptors considered are provided in **Annex C Modelled Receptors**.

## Ecological Receptors

- 4.6.8 The Environment Agency's 'Air emissions risk assessment for your environmental permit'<sup>14</sup> provides guidance on appropriate screening distances for biodiversity sites. The guidance states:

*"Check if there are any of the following within 10km of your site (or within 15km for coal or oil fired power stations):*

- *Special protection areas (SPAs);*
- *Special areas of conservation (SACs); and*
- *Ramsar sites (protected wetlands).*

*Check if there are any of the following within 2km of your site:*

- *Sites of special scientific interest (SSSIs); and*
- *Local nature sites (ancient woods, local wildlife sites and national and local nature reserves).*

*Some larger (greater than 50 megawatt) emitters may be required to screen to 15km for European sites and to 10km or 15km for SSSIs."*

- 4.6.9 Using this guidance, SPAs, SACs, SSSIs and Ramsar sites within 15km of the Proposed Development, and all other biodiversity sites within 2km of the Proposed Development have been assessed. The screening distance for SPAs, SACs, SSSIs and Ramsar sites has been extended to 15km as the EfW CHP Facility includes combustion plant with a thermal input greater than 50MW.

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<sup>14</sup> <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>



- 4.6.10 Where designated sites cover a large area but are situated a large enough distance from the installation (generally >2km), a single Receptor point corresponding to the closest point of any part of the designated area to the installation was input to the model. Where designated sites cover a large area but are situated in close proximity to the installation (generally <2km), a series of Receptor points were used to represent that particular designated site.
- 4.6.11 Model predictions at all ecological Receptors were made at ground level.
- 4.6.12 The following statutory designated biodiversity sites of international importance (internationally designated biodiversity sites) have been identified within 15km of the Site:
- Nene Washes Ramsar site, Special Area of Conservation (SAC) and SPA (6.3km south-west); and
  - Ouse Washes Ramsar, SAC and SPA (12.3km south-east).
- 4.6.13 In addition, there is a Local Wildlife Site (LWS) (River Nene) within 2km of the Proposed Development that was also taken into consideration.
- 4.6.14 Details of all Receptors considered are provided in **Table 8B4.8 Ecological Receptor points**.

**Table 8B4.8 Ecological Receptor points**

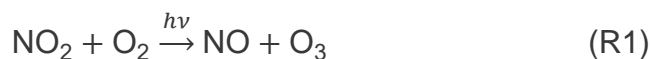
ID	X	Y	Address
E1	546131	309892	River Nene LWS
E2	545808	309580	River Nene LWS
E3	545590	309403	River Nene LWS
E4	545492	309027	River Nene LWS
E5	545251	308640	River Nene LWS
E6	545022	308286	River Nene LWS
E7	544774	307899	River Nene LWS
E8	544556	307553	River Nene LWS
E9	544258	307087	River Nene LWS
E10	543826	306666	River Nene LWS
E11	556199	298255	Nene Washes SAC, SPA & Ramsar
E12	539724	302918	Ouse Washes SAC, SPA & Ramsar





## 4.7 Conversion of NO to NO<sub>2</sub>

4.7.1 Emissions of NO<sub>x</sub> from combustion processes are predominantly in the form of nitrogen monoxide (NO). Excess oxygen in the combustion gases and further atmospheric reactions cause the oxidation of NO to nitrogen dioxide (NO<sub>2</sub>). NO<sub>x</sub> chemistry in the lower troposphere is interlinked in a complex chain of reactions involving VOCs, CO and Ozone (O<sub>3</sub>). Two of the key reactions interlinking NO and NO<sub>2</sub> are detailed below:



where  $h\nu$  is used to represent a photon of light energy (i.e., sunlight).

4.7.2 Taken together, reactions R1 and R2 produce no net change in O<sub>3</sub> concentrations, and NO and NO<sub>2</sub> adjust to establish a near steady state reaction (photo-equilibrium). However, the presence of VOCs and CO in the atmosphere offer an alternative production route of NO<sub>2</sub> for photolysis, allowing O<sub>3</sub> concentrations to increase during the day with a subsequent decrease in the NO<sub>2</sub>:NO<sub>x</sub> ratio. However, at night, the photolysis of NO<sub>2</sub> ceases, allowing reaction R2 to promote the production of NO<sub>2</sub>, at the expense of O<sub>3</sub>, with a corresponding increase in the NO<sub>2</sub>:NO<sub>x</sub> ratio.

4.7.3 Given the complex nature of NO<sub>x</sub> chemistry, the Environment Agency's Air Quality Modelling and Assessment Unit (AQMAU) have adopted a pragmatic, risk based approach in determining the conversion rate of NO to NO<sub>2</sub> which dispersion model practitioners can use in their detailed assessments. The AQMAU presents a number of options including a separate approach for screening and worst case. The Environment Agency's Specified Generators dispersion modelling guidance<sup>15</sup> also advises that the source term should be modelled as NO<sub>x</sub> (as NO<sub>2</sub>) and then suggests a worst case NO<sub>x</sub> to NO<sub>2</sub> conversion ratio of:

- 35% of the modelled NO<sub>x</sub> process contributions should be used for short-term average concentration. That is, 35% of the predicted NO<sub>x</sub> concentrations should be assumed to be NO<sub>2</sub> for short-term assessments
- 70% of the modelled NO<sub>x</sub> process contributions should be used for long-term average concentration. That is, 70% of the predicted NO<sub>x</sub> concentrations should be assumed to be NO<sub>2</sub> for long-term assessments.

4.7.4 This assessment has used the 'Worst Case Scenario' approach in determining the conversion rate of NO to NO<sub>2</sub> as a robust assumption. The AQMAU 'Screening Scenario' factors are only applicable for screening assessments using the H1 software tool, not once a decision has been made to progress to detailed modelling. Use of the screening scenario approach in detailed assessments, particularly the assumption of 100% conversion to NO<sub>2</sub> would, effectively, require perpetual darkness and a non-limiting ozone concentration, to ensure that photolysis of NO<sub>2</sub> does not take place (i.e., reaction R1 ceases) and that the equilibrium shifts reaction R2 to completion. These conditions, quite obviously, could not occur in reality and

<sup>15</sup> <https://www.gov.uk/guidance/specified-generators-dispersion-modelling-assessment?msclid=71f3ea07bbce11ec9f9d93d95c2d97c8>



their use in anything other than a basic, screening assessment, is unrealistic and overly pessimistic.

## 4.8 Group 3 metals

4.8.1 The Annex VI ELV and BAT-AELs specify an aggregated emission level for the nine Group 3 metals. Previously, modelling practitioners had generally assumed, as a worst-case assumption, that each metal was emitted at a concentration corresponding to the ELV for the aggregated group. However, following revision of the environmental assessment levels (EALs) for certain metals and metalloids by Defra's Expert Panel on Air Quality Standards (EPAQS) in 2009 (Defra, 2009)<sup>16</sup>, which resulted in substantial reductions in the EALs for Cr (VI), As and Ni, this historical approach would often result in a theoretical conclusion that the revised EALs may be exceeded.

4.8.2 As a result, the EA produced guidance (Environment Agency, 2016)<sup>17</sup> to allow a more representative assessment of Group 3 metal emissions from municipal solid waste incineration (MSWI) plant.

4.8.3 The guidance adopts a three-tiered approach. The first tier is a screening stage and maintains the same basic approach of assuming each metal is emitted at the aggregated Group 3 metals ELV. For those metals not screened out by this first stage, the second stage of assessment is to assume that each metal is emitted at 11% of the aggregated Group 3 metals ELV (i.e., the ELV apportioned equally across the nine constituent metals).

4.8.4 The third stage allows the use of statistical data derived by the EA from emission monitoring reports and compositional analysis of fly ash from operational MSWIs in the UK between 2007 and 2015, where site specific conditions dictate that such levels could be representative of the emissions from the EfW CHP Facility. Given the similarities in terms of operation and composition of waste, these data were used to predict the impact of speciated Group 3 metals.

## 4.9 Deposition

4.9.1 The predominant route by which emissions will affect land in the vicinity of a process is by deposition of atmospheric emissions. Ecological Receptors can potentially be sensitive to the deposition of pollutants, particularly nitrogen and sulphur compounds, which can affect the character of the habitat through eutrophication and acidification.

4.9.2 Deposition processes in the form of dry and wet deposition remove material from a plume and alter the plume concentration. Dry deposition occurs when particles are brought to the surface by gravitational settling and turbulence. They are then removed from the atmosphere by deposition on the land surface. Wet deposition occurs due to rainout scavenging (within clouds) and washout scavenging (below clouds) of the material in the plume. These processes lead to a variation with

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<sup>16</sup> Defra (2009). 'Guidelines for metals and metalloids in ambient air for the protection of human health.'

<sup>17</sup> Environment Agency (2016). 'Guidance on assessing group 3 metal stack emissions from incinerators.' [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/532474/LIT\\_7349.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/532474/LIT_7349.pdf)



downwind distance of the plume strength and may alter the shape of the vertical concentration profile as dry deposition only occurs at the surface.

- 4.9.3 Near to sources of pollutants, dry deposition is generally the predominant removal mechanism for pollutants such as NO<sub>x</sub>, SO<sub>2</sub> and NH<sub>3</sub> (Fangmeier *et al.* 1994<sup>18</sup>; Environment Agency, 2014<sup>19</sup>). Dry deposition may be quantified from the near-surface plume concentration and the deposition velocity (Chamberlin and Chadwick, 1953)<sup>20</sup>;

$$F_d = v_d C(x, y, 0)$$

Where:

$F_d$  = dry deposition flux ( $\mu\text{g m}^2 \text{s}^{-1}$ )

$v_d$  = deposition velocity ( $\text{m s}^{-1}$ )

$C(x, y, 0)$  = ground level concentration ( $\mu\text{g m}^{-3}$ )

- 4.9.4 Guidance from the EA, SEPA and NRW Technical Advisory Group AQTAG06 (AQTAG, 2014) recommends deposition velocities for various pollutants dependent upon the habitat type (**Table 8B4.9 Environment Agency recommended deposition velocities**)

**Table 8B4.9 Environment Agency recommended deposition velocities**

Pollutant	Deposition velocity ( $\text{m s}^{-1}$ )	
	Grassland	Forest
NO <sub>2</sub>	0.0015	0.003
SO <sub>2</sub>	0.012	0.024
HCl	0.025	0.06
NH <sub>3</sub>	0.02	0.03
HNO <sub>3</sub>	0.04	0.04
SO <sub>4</sub> <sup>2-</sup> (Sulphate aerosol)	0.01	0.01

Source: AQTAG06 (2014)

- 4.9.5 In order to assess the impacts deposition, habitat-specific critical loads and critical levels have been created. These are generally defined as (e.g., Nilsson and Grennfelt, 1988)<sup>21</sup>;

<sup>18</sup> Fangmeier, A. et al., (1994). 'Effects of atmospheric ammonia on vegetation – a review', *Environmental Pollution*, 86, 43–82.

<sup>19</sup> AQTAG06 (2014). 'Technical Guidance on Detailed Modelling Approach for an Appropriate Assessment for Emissions to Air'

<sup>20</sup> Chamberlin and Chadwick (1953). 'Deposition of Airborne Radioiodine Vapour.' *Nucleonics*, 2, 22-25

<sup>21</sup> Nilsson J. and Grennfelt P. (Eds) 1988. 'Critical Loads for Sulphur and Nitrogen'. Miljørapport 1988:15. Nordic Council of Ministers, Copenhagen.



4.9.6 "...a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge."

4.9.7 It is important to distinguish between a critical load and a critical level. The critical load relates to the quantity of a material deposited from air to the ground, whilst critical levels refer to the concentration of a material in air. The UK Air Pollution Information System (APIS) provides critical load data for biodiversity sites in the UK.

4.9.8 The critical loads used to assess the impact of compounds deposited to land which result in eutrophication and acidification are expressed in terms of kilograms of nitrogen deposited per hectare per year ( $\text{kg N ha}^{-1} \text{y}^{-1}$ ) and kilo-equivalents deposited per hectare per year ( $\text{keq ha}^{-1} \text{y}^{-1}$ ). The unit of 'equivalents' (eq) is used for the purposes of assessing acidification, rather than a unit of mass. The unit eq ( $1 \text{ keq} \equiv 1,000 \text{ eq}$ ) refers to molar equivalent of potential acidity resulting from e.g., sulphur, oxidised and reduced nitrogen, as well as base cations. Essentially, it means 'moles of charge' and is a measure of how acidifying a particular chemical species can be.

4.9.9 To convert the predicted concentration in air, the following algorithm is used.

$$DR_i = C_i v_{d_i} f_i$$

Where:

$DR_i$  = annual deposition of the  $i$ th species ( $\text{kg ha y}^{-1}$ )

$C_i$  = annual mean concentration of the  $i$ th species ( $\mu\text{g m}^{-3}$ )

$v_{d_i}$  = deposition velocity of  $i$ th species ( $\text{m s}^{-1}$ )

$f_i$  = factor to convert from  $\mu\text{g m}^{-2} \text{s}^{-1}$  to  $\text{kg ha y}^{-1}$  for the  $i$ th species

4.9.10 **Table 8B4.10 Environment Agency recommended deposition** provides the relevant conversion factors as extracted from AQTAG06

**Table 8B4.10 Environment Agency recommended deposition**

Pollutant	Conversion factor ( $\mu\text{g m}^{-2} \text{s}^{-1}$ to $\text{kg ha}^{-1} \text{y}^{-1}$ )	
	Of	$f_i$
NO <sub>2</sub>	N	96
SO <sub>2</sub>	S	157.7
HCl	Cl	306.7
NH <sub>3</sub>	N	259.7

Source: AQTAG06 (2014)

4.9.11 In order to convert deposition of N or S to acid equivalents, the following relationships can be used:



- $1 \text{ keq ha}^{-1} \text{ y}^{-1} = 14 \text{ kg N ha}^{-1} \text{ y}^{-1}$
- $1 \text{ keq ha}^{-1} \text{ y}^{-1} = 16 \text{ kg S ha}^{-1} \text{ y}^{-1}$
- $1 \text{ keq ha}^{-1} \text{ y}^{-1} = 35.5 \text{ kg Cl ha}^{-1} \text{ y}^{-1}$

4.9.12 Although critical loads are only defined in terms of N and S deposition, the Cl contribution was added to the S contribution as per the guidance from APIS.

4.9.13 With respect to wet deposition, AQTAG06 states:

*"It is considered that wet deposition of SO<sub>2</sub>, NO<sub>2</sub> and NH<sub>3</sub> is not significant within a short range."*

4.9.14 Therefore, the assessment has only considered dry deposition of nitrifying and acidifying compounds. Dry deposition was modelled assuming no depletion of the plume as a conservative assumption. Given the nature of the habitats considered in this study, only the grassland deposition velocities in **Table 8B4.10 Environment Agency recommended deposition** was considered.

## Deposition of metals

4.9.15 Deposition of metals were modelled assuming no plume depletion and application of a conservative deposition velocity of  $0.01 \text{ ms}^{-1}$  to the predicted annual mean process contributions, as suggested in the Environment Agency's *Air emissions risk assessment for your environmental permit*<sup>4</sup> guidance. The guidance indicates that a deposition velocity of this magnitude is appropriate for particles of diameter less than 10mm and conservative for smaller particles.

4.9.16 As metals will predominately be released in particle size fractions less than  $10 \mu\text{m}$ , this approach is considered to be robust, if not overly pessimistic. With respect to wet deposition of metals, the assessment applies a factor of three to the dry deposition rate in line with the Environment Agency's guidance.

## 4.10 Other point source emissions in the local area

4.10.1 The Environment Agency's Pollution Inventory<sup>22</sup> has been reviewed to identify any existing Part A(1) installations in the vicinity of the Proposed Development that may have a potentially significant cumulative impact on local air quality and, as such, would warrant their specific inclusion in the dispersion model. The following Part A(1) installations have been identified:

- Wisbech Compressor Station (except for methane, all emissions below the reporting threshold);
- Wisbech West Walton Sewage Treatment Works (all emissions below reporting threshold);
- Grencore Prepared Meals (all emissions below reporting threshold); and

<sup>22</sup> Environment Agency (2020). '2018 Pollution Inventory Dataset - Version 1'  
<https://ea.sharefile.com/share/view/s26ce2ef6793486f8>



- Princes Foods (except for carbon dioxide, all emissions below reporting threshold).

4.10.2 As emissions of relevant pollutants associated with chimney discharges from the EfW CHP Facility are below reporting thresholds for other Part A(1) installations in the local area, it is not proposed to specifically include their emissions in the dispersion model. However, as all Part A(1) installations are included in Defra's national mapped estimates of background concentrations which were used as part of the assessment, such emissions were considered indirectly.

## 4.11 Sensitivity analysis

4.11.1 Process emissions were modelled under various expected normal and abnormal operational scenarios using the standard steady state algorithms in ADMS to determine the impact on local human and ecological Receptors. In order to model atmospheric dispersion using standard Gaussian methods, the following assumptions and limitations must be made:

- Conservation of mass – the entire mass of emitted pollutant remains in the atmosphere and no allowance is made for loss due to chemical reactions or deposition processes (although the standard Gaussian model can be modified to include such processes). Portions of the plume reaching the ground are assumed to be dispersed back away from the ground by turbulent eddies (eddy reflection).
- Steady state emissions – emission rates are assumed to be constant and continuous over the time averaging period of interest.
- Steady state meteorology – no variations in wind speed, direction or turbulent profiles occur during transport from the source to the Receptor. This assumption is reasonable within a few kilometres of a source but may not be valid for Receptor distances in the order of tens of kilometres. For example, for a Receptor 50km from a source and with a wind speed of  $5\text{ m s}^{-1}$  it takes nearly three hours for the plume to travel this distance during which time many different processes may change (e.g., the sun may rise or set and clouds may form or dissipate affecting the turbulent profiles). For this reason, Gaussian models are practically limited to predicting concentrations within ~20km of a source.

4.11.2 As a result of the above, and in combination with other factors, not least attempting to replicate stochastic processes (e.g., turbulence) by deterministic methods, dispersion modelling is inherently uncertain, but is nonetheless a useful tool in plume footprint visualisation and prediction of ground level concentrations. The use of dispersion models has been widely used in the UK for both regulatory and compliance purposes for many years and is an accepted approach for this type of assessment. The model used has also undergone extensive validation.

4.11.3 The assessment was designed to incorporate several worst-case assumptions, which likely resulted in an overestimation of the predicted ground level concentrations. As a result of these worst-case assumptions, the predicted results should be considered the upper limit of model uncertainty for a scenario where the actual site impact is determined. These worst-case assumptions include:



- Assuming emissions from the EfW CHP Facility stack occur at IED ELVs or BAT-AELs, whereas operational data from another UK EfW CHP Facility operated by MVV indicates emission concentrations are much lower;
- Assuming the EfW CHP Facility is operational continuously throughout the year, whereas the design basis is for each line to be operational for 8,000 hours per annum (91.3% of the year);
- Assuming all VOCs emitted are as benzene; and
- Reporting results from the year(s) producing the highest predicted impacts at Receptors from 5 years of meteorological data.

4.11.4

However, sensitivity analysis is an important component of any model assessment, since it helps to identify the magnitude of potential uncertainty in model predictions. Various sensitivity analyses were undertaken to identify the uncertainty in model predictions in relation to the following inputs and presented in **Annex F Model sensitivity tests**:

- Choice of dispersion model;
- Buildings;
- Terrain; and
- Emission parameters.



## 5. Traffic emissions methodology

### Model inputs

#### *Modelled road network*

- 5.1.1 The ADMS-Roads dispersion model, used in this assessment, has been widely validated for this type of assessment and is specifically listed in the Defra's LAQM.TG(16) guidance as an accepted dispersion model.
- 5.1.2 Traffic data comprising Annual Average Daily Traffic (AADT) for the roads surrounding the Proposed Development were obtained from Wood Transport Consultants and were agreed with Highways department of CCC. Data was provided for all vehicles and for Heavy Duty Vehicles (HDV), which comprises Heavy Goods Vehicles (HGV) and buses/coaches. The extent of the road network modelled is presented in **Graphic 8B5.1 Modelled road links**.
- 5.1.3 Emissions were calculated using the Emission Factor Toolkit (EFT) v11.0<sup>23</sup>. Traffic data provided only reflected all vehicles and HDVs, the basic split option was therefore selected in the three baseline traffic scenarios (2021, 2024 and 2027). Baseline traffic data inputs are presented in **Annex D Traffic Modelling**.
- 5.1.4 The construction and operational phases will only create additional HGV traffic (i.e., no buses/coaches), therefore for the 2024 With Construction and 2027 With Development scenarios, the EFT detailed option 1 was used. Percentage of vehicles categories were calculated using the default vehicle split used in the EFT<sup>24</sup>. Traffic data inputs for the 2024 With Construction and 2027 With Development scenarios are presented in **Annex D Traffic Modelling**.
- 5.1.5 The following scenarios were modelled:
- 2021 Baseline - the current baseline based on 2021 emission factors, traffic data and background data;
  - 2024 Baseline – future case based on 2024 emission factors, traffic data and 2021 background data;
  - 2024 With Construction – future case based on 2024 emission factors, traffic data and 2021 background data;
  - 2027 Baseline - future case based on 2027 emission factors, traffic data and 2021 background data; and
  - 2027 With Development - future case based on 2027 emission factors, traffic data and 2021 background data.

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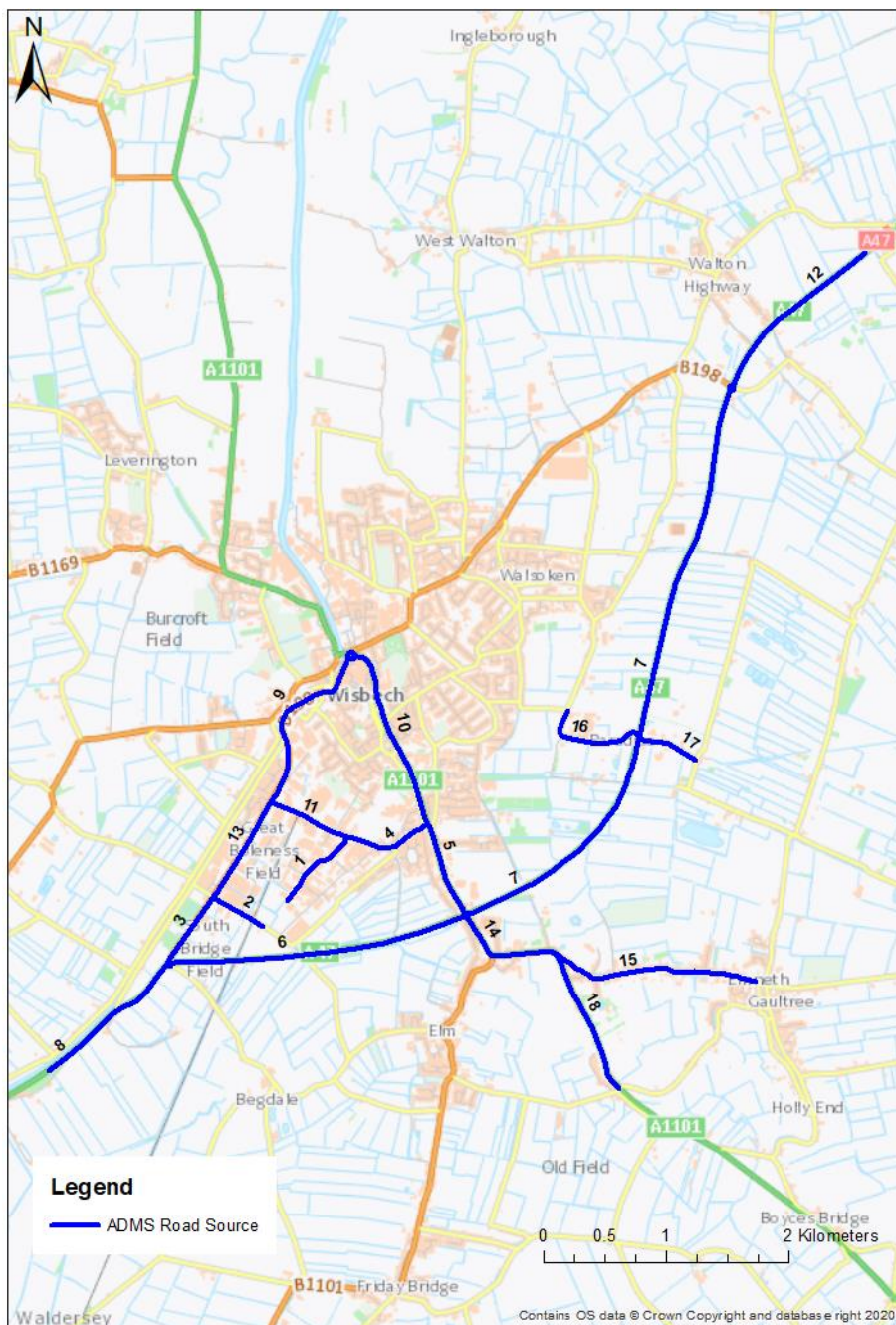
<sup>23</sup> Defra. (November 2021). Emissions Factors Toolkit (EFT) v.11.0. <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/>

<sup>24</sup> National Atmospheric Emissions Inventory (NAEI). Vehicle fleet composition projections (Base 2019r). <https://naei.beis.gov.uk/data/ef-transport>





Graphic 8B5.1 Modelled Road Links



## Model verification

- 5.1.6 Model validation undertaken by the software developer (CERC) did not include validation in the vicinity of the Proposed Development Site. It is therefore necessary to perform a comparison of modelled results with local monitoring data at relevant locations. This process of verification attempts to minimise modelling uncertainty and systematic error by correcting modelled results by an adjustment factor to gain greater confidence in the final results.
- 5.1.7 The predicted results from a dispersion model may differ from measured concentrations for a large number of reasons, including uncertainties associated with:



- Background concentration estimates;
- Meteorological data;
- Source activity data such as traffic flows and emissions factors;
- Model input parameters such as surface roughness length, minimum Monin Obukhov length;
- Monitoring data, including locations; and
- Overall model limitations.

5.1.8 Model verification is the process by which these and other uncertainties are investigated and where possible minimised. In reality, the differences between modelled and monitored results are likely to be a combination of all of these aspects.

5.1.9 Model setup parameters and input data were checked prior to running the models in order to reduce these uncertainties. The following were checked to the extent possible to ensure accuracy:

- Traffic data;
- Road widths;
- Distance between sources and monitoring as represented in the model;
- Speed estimates on roads;
- Source types, such as elevated roads and street canyons;
- Selection of representative meteorological data;
- Background monitoring and background estimates; and
- Monitoring data.

5.1.10 Results from the monitoring survey undertaken by Wood in 2021 were used for the purpose of model verification. Monitoring sites 4, 5, 7, 8, 11, 12 and 13 were used for verification purposes as they are located on roads for which traffic data was available and are within an acceptable distance from the modelled roads. **Table 8B5.1 Local monitoring data suitable for ADMS-Roads model verification** presented the data used in the verification calculations.

**Table 8B5.1 Local monitoring data suitable for ADMS-Roads model verification**

	2021 Monitored Annual Mean NO <sub>2</sub> (µgm <sup>-3</sup> )	X (m)	Y (m)
4	19.8	545503	308691
5	18.2	544979	307825
7	15.7	546600	308401
8	16.6	546444	308355



	2021 Monitored Annual Mean NO <sub>2</sub> (µgm <sup>-3</sup> )	X (m)	Y (m)
11	21.5	547083	307871
12	15.2	546904	308258
13	29.8	546531	309265

5.1.11 The verification of the modelling output was performed in accordance with the methodology provided in Annex 3 of LAQM.TG(16). **Table 8B5.2 Verification, modelled versus monitored before adjustment** shows that there was systematic under-prediction of monitored concentrations at the monitoring sites.

**Table 8B5.2 Verification, modelled versus monitored before adjustment**

Site	2021 Modelled Annual Mean NO <sub>2</sub> (µgm <sup>-3</sup> )	2021 Monitored Annual Mean NO <sub>2</sub> (µgm <sup>-3</sup> )	% (Modelled-Monitored)/ Monitored
4	13.0	19.8	-34.7%
5	12.1	18.2	-33.9%
7	12.5	15.7	-20.4%
8	11.9	16.6	-28.3%
11	14.5	21.5	-32.5%
12	12.3	15.2	-18.7%
13	18.2	29.8	-38.9%

5.1.12 **Table 8B5.3 Comparison of modelled and monitored road NO<sub>x</sub> to determine verification factor** shows the comparison of modelled road-NO<sub>x</sub>, a direct output from the ADMS-Roads modelling, with the monitored road-NO<sub>x</sub>, determined from the LAQM NO<sub>x</sub> to NO<sub>2</sub> conversion tool. As a worst-case approach, the minimum background concentration for 2021 at any of the sites used in the verification was used for all sites in the NO<sub>x</sub> to NO<sub>2</sub> conversion tool.

**Table 8B5.3 Comparison of modelled and monitored road NO<sub>x</sub> to determine verification factor**

Site	2021 Modelled Annual Mean Road NO <sub>x</sub> (µgm <sup>-3</sup> )	2021 Monitored Annual Mean Road NO <sub>x</sub> (µgm <sup>-3</sup> )	Ratio
4	8.2	21.2	2.59
5	6.5	18.1	2.77
7	7.3	13.3	1.82



Site	2021 Modelled Annual Mean Road NO <sub>x</sub> (µgm <sup>-3</sup> )	2021 Monitored Annual Mean Road NO <sub>x</sub> (µgm <sup>-3</sup> )	Ratio
8	6.2	14.9	2.41
11	11.1	24.58	2.21
12	7.0	12.29	1.75
13	18.1	41.6	2.30
Linear average			2.27

5.1.13 An adjustment factor of 2.27 was calculated as the linear function ratio between the Modelled Annual Mean Road NO<sub>x</sub> and the Monitored Annual Mean Road NO<sub>x</sub>.

5.1.14 **Table 8B5.4 Comparison of adjusted modelled NO<sub>x</sub> and modelled NO<sub>2</sub>** shows the comparison of the modelled NO<sub>2</sub> concentration calculated by multiplying the modelled road NO<sub>x</sub> by the adjustment factor of 2.27 and using the LAQM's NO<sub>x</sub> to NO<sub>2</sub> conversion tool to calculate the total adjusted modelled NO<sub>2</sub>.

**Table 8B5.4 Comparison of adjusted modelled NO<sub>x</sub> and modelled NO<sub>2</sub>**

Site	2021 Background NO <sub>2</sub> Concentration	2021 Modelled Annual Mean NO <sub>2</sub> (µgm <sup>-3</sup> )	Adjusted Annual Mean NO <sub>2</sub> (µgm <sup>-3</sup> )	2021 Monitored Annual Mean NO <sub>2</sub> (µgm <sup>-3</sup> )	% (Modelled-Monitored)/ Monitored
4	8.5	18.6	19.8	19.8	-6.8%
5	8.5	14.8	18.2	18.2	-9.4%
7	8.5	16.6	15.7	15.7	11.2%
8	8.5	14.1	16.6	16.6	-2.7%
11	8.5	25.2	21.5	21.5	1.5%
12	8.5	15.9	15.2	15.2	12.7%
13	8.5	41.1	29.8	29.8	-0.8%

5.1.15 Following adjustment, NO<sub>2</sub> concentrations are all within 15% of monitored concentrations. Modelled road contribution of NO<sub>2</sub>, NH<sub>3</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations have been adjusted using an adjustment factor of 2.27.



## 6. Results

### 6.1 Chimney height assessment

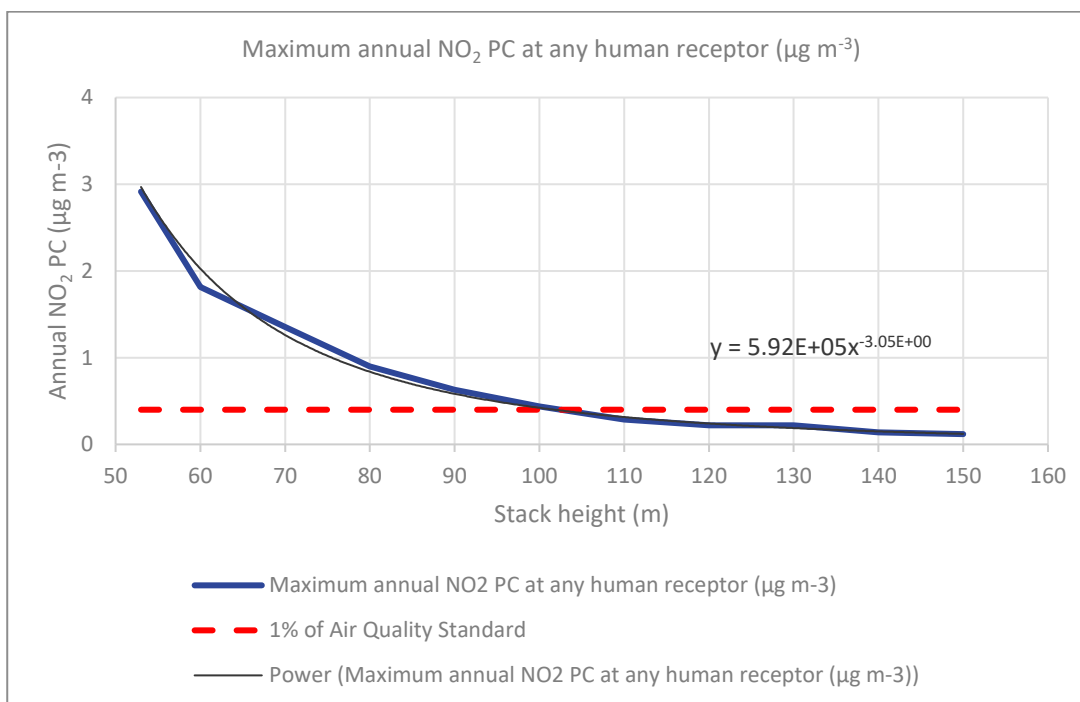
- 6.1.1 The purpose of the chimney height assessment is to ascertain the height required for the chimney associated with each incineration line that ensures application of Best Available Technique (BAT) and/or that no significant effects on air quality occur. The assessment considers guidance issued by the EA in its '*EPR Permit - Stack Height Assessment*' internal draft guidance document.
- 6.1.2 In determining the height of new discharging chimneys that corresponds to BAT, the guidance advises that the reduction in ground level impact as a function of chimney cost be plotted on a graph. The BAT chimney height occurs at the 'knee-point' of this graph, i.e., the point at which the further reduction in impact starts to become disproportionate to the additional cost incurred.
- 6.1.3 At this preliminary stage of the design, cost data for the chimneys is not available. Consequently, the assessment has been performed using the chimney height itself as a proxy for cost on the x-axis, assuming that the cost of the chimneys is approximately proportional to its height, at least within the range of likely heights.
- 6.1.4 The base configuration was a chimney 3m above the level of the tallest building, this being the minimum requirement of the EA's D1 guidance note. Proceeding in 10m increments, nine other heights were modelled and the maximum impact of the above pollutants determined at relevant Receptor locations. The chimney heights considered therefore covered the range 53 – 150m.
- 6.1.5 The ADMS 5.2 dispersion model was used to make the predictions of process contributions from the chimneys using five years of hourly sequential meteorological data from the Met Office's Numerical Weather Prediction (NWP) model, interpolated for the specific location of the chimneys.
- 6.1.6 Site layout plans provided by the Applicant indicate the emissions from each incineration line are discharged to atmosphere via independent chimneys adjacent to one another. Although not within the same windshield, the chimneys are close enough in proximity to benefit from the enhanced buoyancy effects that result where multiple flues are near one another. Generally, these beneficial effects occur where a chimney is within a distance of five chimney diameters from another. An additional input file to combine the discharges of both chimneys has been used.
- 6.1.7 Chimney emission process contribution (PC) for annual mean (long-term) and 1-hour mean (short-term) NO<sub>2</sub> concentrations have been predicted at human Receptors, and the long-term impact of emissions of NO<sub>x</sub>, NH<sub>3</sub>, SO<sub>2</sub> and HCl at ecological Receptors to assess nitrogen and acid deposition rates.
- 6.1.8 Calculation of the predicted environmental concentration (PEC) has accounted for traffic emissions on roads in the immediate vicinity of the Proposed Development (i.e., predicted concentrations from the traffic model were used to calculate the PEC for the relevant pollutants). Traffic surveys were carried out in summer 2021 and are used to screen traffic flows for inclusion in the assessment.



### Impacts at human Receptors

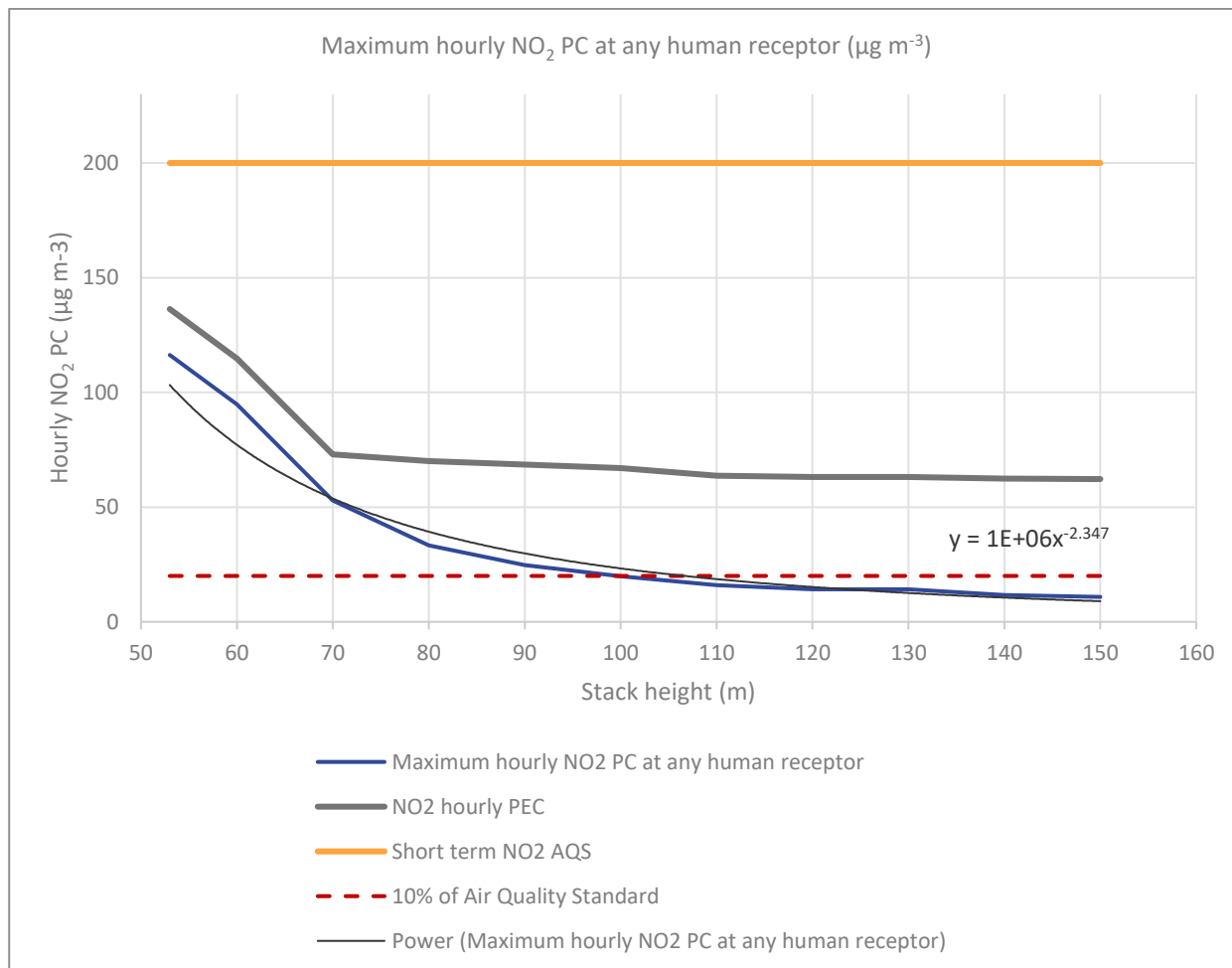
- 6.1.9 **Graphic 8B6.1** and **8B6.2** provide the chimney height assessment graphs for long and short term NO<sub>2</sub> impacts to human Receptors.
- 6.1.10 From **Graphic 8B6.1**, it is calculated that the knee-point of the graph occurs at a height of 84m. There is no exceedance of the NO<sub>2</sub> air quality standard at this point, but insignificance does not occur until approximately 105m (N.B., simply because a process contribution does not screen out as insignificant, does not mean the associated impact is significant). In this scenario, and in the context of annual mean concentrations of NO<sub>2</sub>, the likely minimum acceptable chimney heights would be 84m. **Annex E Chimney height methodology** presents the knee point calculations.
- 6.1.11 From **Graphic 8B6.2**, it is calculated that the knee-point of the graph occurs at a height of 75m. There is no exceedance of the NO<sub>2</sub> air quality standard at this point but insignificance does not occur until a height of ~ 100m. In this scenario, and in the context of annual mean concentrations of NO<sub>2</sub>, the likely minimum acceptable chimney heights would be 75m.
- 6.1.12 The minimum height of 84m also provides headroom for any additional short term emissions from the emergency generator, which has been modelled and the results presented in **Section 6.4**.

### Graphic 8B6.1 Chimney height assessment of long-term NO<sub>2</sub> impacts at human Receptors





## Graphic 8B6.2 Chimney height assessment of short-term NO<sub>2</sub> impacts at human Receptors



Note: hourly mean NO<sub>2</sub> PC at 99.79<sup>th</sup> percentile.

### Impacts at ecological Receptors

- 6.1.13 The chimney height assessment determined that, due to the distance to the ecological Receptors, the modelled process contributions of NO<sub>x</sub> and nitrogen and acid deposition rates at all ecological Receptors can be screened out as insignificant for all chimney heights assessed.

### Summary

- 6.1.14 Taking in to account the Environment Agency's guidance, the chimney height which has been identified as corresponding to BAT and has been used to model impact of chimney emissions in this assessment is 84m (this is considered a worst case scenario recognising that the Applicant's vertical LoD includes for chimneys up to 90m in height).



## 6.2 Normal operation

### Human Receptors

- 6.2.1 **Table 8B6.1 Summary model results for human Receptor experiencing maximum process contribution from chimney and traffic emissions (Maximum PC)** details the results of the impact assessment. **Table 8B6.2 Summary model results for human Receptor experiencing maximum process contribution** and **Table 8B6.3 Summary model results for human Receptor experiencing maximum predicted environmental concentration** detail the results for pollutants emitted by both the traffic and chimney sources.
- 6.2.2 The annual mean and hourly mean NO<sub>2</sub> PC contours from chimney emissions are shown in ES **Figure 8.5: Annual mean NO<sub>2</sub> concentration contours** and **Figure 8.6: Hourly mean NO<sub>2</sub> PC concentration contours (equivalent of 99.79<sup>th</sup> percentile)** (both **Volume 6.3**) respectively.





**Table 8B6.1 Summary model results for human Receptor experiencing maximum process contribution from chimney and traffic emissions (Maximum PC)**

Pollutant	Averaging Period	AQAL ( $\mu\text{g}/\text{m}^3$ )	Receptor which maximum PC occurs	at Maximum PC ( $\mu\text{g}/\text{m}^3$ )	Maximum PC as a % of AQAL	Maximum PC ( $\mu\text{g}/\text{m}^3$ )	Maximum PC as a % of AQAL	Impact descriptor
<b>NO<sub>2</sub></b>	Annual	40	R84	0.79	2%	17.82	45%	Negligible
<b>NO<sub>2</sub></b>	1-hour mean, no more than 18 exceedances a year (equivalent of 99.79 Percentile)	200	R5	29.83	15%	52.26	26%	Small
<b>CO</b>	8-hour	10,000	R96	20.49	<0.01%	542.49	5%	Negligible
<b>CO</b>	1-hour	30,000	R96	30.85	<0.01%	588.85	2%	Negligible
<b>PM<sub>10</sub></b>	Annual	40	R83	0.08	0.2%	15.95	40%	Negligible
<b>PM<sub>10</sub></b>	24-hour mean, no more than 35 exceedances per year (90.41 percentile)	50	R84	0.17	0%	31.76	64%	Negligible
<b>PM<sub>2.5</sub></b>	Annual	20	R84	0.05	0.2%	10.08	50%	Negligible
<b>SO<sub>2</sub></b>	1-hour mean, not to be exceeded more	350	R5	42.17	12%	45.42	13%	Small



Pollutant	Averaging Period	AQAL ( $\mu\text{g}/\text{m}^{-3}$ )	Receptor which maximum PC occurs	at PC	Maximum PC ( $\mu\text{g}/\text{m}^{-3}$ )	Maximum PC as a % of AQAL	Maximum PC of PEC ( $\mu\text{g}/\text{m}^{-3}$ )	Maximum PEC as a % of AQAL	Impact descriptor
	than 24 times per year (equivalent to 99.73 percentile)								
<b>SO<sub>2</sub></b>	24-hour mean not to be exceeded more than 3 times a year (equivalent to 99.18 percentile)	125	R5		20.23	16%	23.48	19%	Negligible
<b>SO<sub>2</sub></b>	15-minute mean, not to be exceeded more than 35 times a year (equivalent to 99.9 percentile)	266	R6		47.29	18%	50.30	19%	Small
<b>NH<sub>3</sub></b>	Annual	180	R83		0.14	0.1%	2.54	1%	Negligible
<b>NH<sub>3</sub></b>	1-hour	2,500	R108		3.09	0.1%	7.57	0.3%	Negligible
<b>VOC as benzene</b>	Annual	5	R196		0.09	2%	0.36	7%	Negligible
<b>VOC as benzene</b>	1-hour	195	R108		6.17	3.2%	6.70	3.4%	Negligible
<b>HCL(human)</b>	1-hour	750	R108		18.51	2.5%	18.93	3%	Negligible



Pollutant	Averaging Period	AQAL ( $\mu\text{g}/\text{m}^{-3}$ )	Receptor which maximum occurs	at PC	Maximum PC ( $\mu\text{g}/\text{m}^{-3}$ )	Maximum PC as a % of AQAL	Maximum PEC ( $\mu\text{g}/\text{m}^{-3}$ )	Maximum PEC as a % of AQAL	Impact descriptor
HF (human)	1-hour	160	R108		1.23	0.8%	7.23	5%	Negligible
Group 1 metals - Cadmium	Annual	0.005	R96		<0.01	4%	<0.01	6%	Negligible
Group 1 metals - Cadmium	1-hour	1.5	R108		<0.01	0.17%	<0.01	0.18%	Negligible
Group 2 metals - Mercury	Annual	0.25	R96		<0.01	<0.01%	<0.01	<0.01%	Negligible
Group 2 metals - Mercury	1-hour	7.5	R108		<0.01	0.03%	<0.01	0.03%	Negligible
Group 3 metals - Antimony	Annual	5	R96		<0.01	<0.01%	<0.01	<0.01%	Negligible
Group 3 metals - Antimony	1-hour	5	R108		<0.01	<0.01%	<0.01	<0.01%	Negligible
Group 3 metals - Arsenic	Annual	0.003	R96		<0.01	0.05%	<0.01	18%	Negligible
Group 3 metals - Arsenic	1-hour	15	R108		<0.01	<0.01%	0.0013	0.01%	Negligible



Pollutant	Averaging Period	AQAL ( $\mu\text{g}/\text{m}^{-3}$ )	Receptor which maximum PC occurs	at PC	Maximum ( $\mu\text{g}/\text{m}^{-3}$ )	PC Maximum as a % of AQAL	Maximum PEC ( $\mu\text{g}/\text{m}^{-3}$ )	Maximum PEC as a % of AQAL	Impact descriptor
<b>Group 3 metals - Chromium III</b>	Annual	5	R96		<0.01	<0.01%	<0.01	<0.01%	Negligible
<b>Group 3 metals - Chromium III</b>	1-hour	150	R108		<0.01	<0.01%	0.0018	<0.01%	Negligible
<b>Group 3 metals - Chromium VI</b>	Annual	0.0002	R96		<0.01	<0.01%	<0.01	23%	Negligible
<b>Group 3 metals - Copper</b>	Annual	10	R96		<0.01	<0.01%	<0.01	<0.01%	Negligible
<b>Group 3 metals - Copper</b>	1-hour	200	R108		<0.01	<0.01%	<0.01	<0.01%	Negligible
<b>Group 3 metals - Lead</b>	Annual	0.25	R96		<0.01	<0.01%	<0.01	1%	Negligible
<b>Group 3 metals - Manganese</b>	Annual	0.15	R96		<0.01	<0.01%	<0.01	2%	Negligible
<b>Group 3 metals - Manganese</b>	1-hour	1500	R108		<0.01	<0.01%	<0.01	<0.01%	Negligible
<b>Group 3 metals - nickel</b>	Annual	0.02	R96		<0.01	0.07%	<0.01	3%	Negligible



Pollutant	Averaging Period	AQAL ( $\mu\text{g}/\text{m}^3$ )	Receptor which maximum PC occurs	at Maximum PC ( $\mu\text{g}/\text{m}^3$ )	Maximum PC as a % of AQAL	Maximum PC of PEC ( $\mu\text{g}/\text{m}^3$ )	Maximum PEC as a % of AQAL	Impact descriptor
Group 3 metals - nickel	1-hour	30	R108	<0.01	<0.01%	<0.01	0.01%	Negligible
Group 3 metals - Vanadium	Annual	5	R96	<0.01	<0.01%	<0.01	<0.01%	Negligible
Group 3 metals - Vanadium	1-hour	1	R108	<0.01	0.20%	<0.01	0.39%	Negligible
PAH as B(a)P	Annual	0.001	R96	<0.01	0.04	<0.01	10%	Negligible
PCBs	Annual	0.2	R96	<0.01	<0.01%	<0.01	<0.01%	Negligible
PCBs	1-hour	6	R108	<0.01	<0.01%	<0.01	<0.01%	Negligible

Note: Process contribution from change in traffic flows added to maximum PC for NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and NH<sub>3</sub>.

**Table 8B6.2 Summary model results for human Receptor experiencing maximum process contribution from chimney emissions**

Pollutant	Averaging Period	AQAL ( $\mu\text{g}/\text{m}^3$ )	Receptor at which maximum PC (Stack) occurs	at Maximum PC ( $\mu\text{g}/\text{m}^3$ )	Maximum PC (Stack) as a % of AQAL	PC (Traffic)	PEC ( $\mu\text{g}/\text{m}^3$ )	PEC as a % of AQAL
NO <sub>2</sub>	Annual	40	R96	0.78	2%	0.01	16.78	42%
NO <sub>2</sub>	1-hour mean, no more than 18 exceedances a	200	R5	29.79	15%	0.04	52.26	26%



Pollutant	Averaging Period	AQAL ( $\mu\text{g m}^{-3}$ )	Receptor at which maximum PC (Stack) occurs	Maximum PC (Stack) ( $\mu\text{g m}^{-3}$ )	Maximum PC (Stack) as a % of AQAL	PC (Traffic)	PEC ( $\mu\text{g m}^{-3}$ )	PEC as a % of AQAL
	year (equivalent of 99.79 Percentile)							
PM <sub>10</sub>	Annual	40	R96	0.05	0.12%	<0.01	15.75	39%
PM <sub>10</sub>	24-hour mean, no more than 35 exceedances per year (90.41 percentile)	50	R96	0.16	0.3%	0.01	31.57	63%
PM <sub>2.5</sub>	Annual	25	R96	0.05	0.2%	0.05	11.12	44%
NH <sub>3</sub>	Annual	180	R96	0.09	0.05%	0.01	2.86	2%
NH <sub>3</sub>	1 hour	2,500	R108	3.08	0.1%	0.01	7.57	0.3%

**Table 8B6.3 Summary model results for human Receptor experiencing maximum predicted environmental concentration**

Pollutant	Averaging Period	AQAL ( $\mu\text{g m}^{-3}$ )	Receptor at which maximum PC occurs	Maximum PC (Stack) ( $\mu\text{g m}^{-3}$ )	Maximum PC (Stack) as a % of AQAL	PC (Traffic)	PEC ( $\mu\text{g m}^{-3}$ )	PEC as a % of AQAL
NO <sub>2</sub>	Annual	40	R41	0.39	1%	0.01	28.19	70%
NO <sub>2</sub>	1-hour mean, no more than 18 exceedances a year (equivalent of 99.79 Percentile)	200	R41	13.78	7%	0.02	69.38	35%
PM <sub>10</sub>	Annual	40	R53	0.01	0.04%	0.01	17.23	43%



Pollutant	Averaging Period	AQAL ( $\mu\text{g m}^{-3}$ )	Receptor maximum occurs	at which PEC	PC (Stack) ( $\mu\text{g m}^{-3}$ )	PC (Stack) as a % of AQAL	PC (Traffic)	PEC ( $\mu\text{g m}^{-3}$ )	PEC as a % of AQAL
<b>PM<sub>10</sub></b>	24-hour mean, no more than 35 exceedances per year (90.41 percentile)	50	R53		0.04	0.09%	0.02	34.47	69%
<b>PM<sub>2.5</sub></b>	Annual	20	R53		0.01	0.05%	<0.01	11.12	56%
<b>NH<sub>3</sub></b>	Annual	180	R54		0.03	0.01%	0.02	5.43	3%
<b>NH<sub>3</sub></b>	1 hour	2,500	R53		0.74	0.03%	0.04	11.55	0.46%



## Ecological Receptors

6.2.3 **Table 8B6.4 Impact to air quality at ecological Receptors at internationally designated biodiversity sites** presents predicted pollutant concentrations compared to critical levels and deposition compared to critical loads at internationally designated biodiversity sites

6.2.4 **Table 8B6.5 Impact to air quality at ecological Receptors at Local Wildlife Sites** presents predicted pollutant concentrations compared to critical levels and deposition compared to critical loads at LWS

**Table 8B6.4 Impact to air quality at ecological Receptors at internationally designated biodiversity sites**

Pollutant	Averaging Period	Critical level ( $\mu\text{g m}^{-3}$ )	Receptor at which maximum PC occurs	Maximum PC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of critical level
NO <sub>x</sub>	Annual	30	E12	0.06	0.2%
NO <sub>x</sub>	Daily	200	E12	1.21	0.6%
SO <sub>2</sub> (ecological Receptors)	Annual	20	E12	0.01	0.1%
HF (ecological Receptors)	24-hour	5	E12	0.01	<0.1%
HF (ecological Receptors)	Weekly	0.5	E12	<0.01	<0.1%
NH <sub>3</sub> (ecological Receptors)	Annual	3	E12	<0.01	<0.1%

**Table 8B6.5 Impact to air quality at ecological Receptors at Local Wildlife Sites**

Pollutant	Averaging Period	Critical level ( $\mu\text{g m}^{-3}$ )	Receptor at which maximum PC occurs	Maximum PC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of critical level
NO <sub>x</sub>	Annual	30	E1	0.34	1.0%
NO <sub>x</sub>	Daily	200	E8	9.91	5.0%
SO <sub>2</sub>	Annual	20	E1	0.07	<1%
HF	24-hour	5	E1	0.04	<1%
HF	Weekly	0.5	E1	<0.01	<1%
NH <sub>3</sub>	Annual	3	E1	0.05	2%





## Deposition

### *Metal deposition*

6.2.5 **Table 8B6.6 Maximum modelled metal deposition rates at human Receptors** presents the results of the impact assessment of metal deposition at the specific human Receptor considered in this study that experiences the maximum deposition rate associated with process emissions.

**Table 8B6.6 Maximum modelled metal deposition rates at human Receptors**

Metal	MDR (mg m <sup>-2</sup> d <sup>-1</sup> )	PC (ng m <sup>-3</sup> )	PDR (mg m <sup>-2</sup> d <sup>-1</sup> )	%PDR of MDR
Arsenic	0.02	0.28	0.00072	3.6%
Cadmium	0.009	0.19	0.00048	5.3%
Chromium	1.5	0.28	0.00072	<0.1%
Copper	0.25	0.28	0.00072	0.3%
Lead	1.1	0.28	0.00072	0.1%
Mercury	0.004	0.19	0.00048	12.0%
Molybdenum	0.016	0.28	0.00072	4.5%
Nickel	0.11	0.28	0.00072	0.7%
Selenium	0.012	0.28	0.00072	6.0%
Zinc	0.48	0.28	0.00072	0.2%

MDR = maximum deposition rate (as defined by H1 guidance); PC = process contribution of metal in air; PDR = predicted deposition rate to ground

### *Nitrogen and acid deposition*

6.2.6 **Table 8B6.7 Deposition at ecological Receptors at internationally designated biodiversity sites** present the assessment of nitrogen deposition and acid deposition rates against the established critical loads for the ecological Receptors with prescribed critical loads at internationally designated biodiversity sites. In regard to acid deposition the critical load function approach has been applied, as detailed in the APIS website.

6.2.7 **Table 8B6.8 Deposition at ecological Receptors at Local Wildlife Sites** present the assessment of nitrogen deposition and acid deposition rates against the established critical loads for the ecological Receptors with prescribed critical loads at LWS.



**Table 8B6.7 Deposition at ecological Receptors at internationally designated biodiversity sites**

	Critical Load	Maximum N PC	Maximum S PC	Maximum PC as a % of CL
<b>Nitrogen deposition</b>	20 kg N/ ha/ yr	0.031	-	0.2%
<b>Acid deposition</b>	0.4 keq N/ ha/ yr (CLminN)	0.002	0.002	0.1%

**Table 8B6.8 Deposition at ecological Receptors at Local Wildlife Sites**

	Critical Load	Maximum N PC	Maximum S PC	Maximum PC as a % of CL
<b>Nitrogen deposition</b>	10 kg N/ ha/ yr	0.258	-	3%
<b>Acid deposition</b>	1 keq N/ ha/ yr (CLminN)	0.018	0.011	0.5%

## 6.3 Abnormal operation

### Human Receptors

6.3.1 **Table 8B6.9 Summary model results for human Receptor experiencing maximum process contribution in abnormal scenario** presents the summary model results during abnormal operating conditions of the combustion unit and associated FGT infrastructure for the specific Receptor experiencing the maximum PC and PEC. As discussed in Section 2, where ELVs are not specified for abnormal operating conditions, emission rates from the main chimneys during abnormal operation have been derived from those occurring during normal operation based on the FGT efficiency.

6.3.2 As Article 46(6) of Directive 2010/75/EU states ELVs must not be exceeded for no more than 4 hours uninterrupted, only those pollutants with an AQO averaging period less than this duration are considered as part of the abnormal emissions assessment. After a period of four hours, the plant would have entered a complete shutdown if exceedances of the ELVs had persisted.

**Table 8B6.9 Summary model results for human Receptor experiencing maximum process contribution in abnormal scenario**

Pollutant	Averaging Period	AQAL ( $\mu\text{g m}^{-3}$ )	Receptor which maximum occurs	at PC	Maximum PC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of AQAL	Maximum PEC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of AQAL
<b>NO<sub>2</sub></b>	1-hour mean, no more than	200	R5		59.62	30%	82.05	41%



Pollutant	Averaging Period	AQAL ( $\mu\text{g m}^{-3}$ )	Receptor which maximum occurs	at PC	Maximum PC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of AQAL	Maximum PEC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of AQAL
	18 exceedances a year (equivalent of 99.79 Percentile)							
CO	8-hour	10,000	R5		102.44	1%	624.44	6%
CO	1-hour	30,000	R108		154.23	1%	712.23	2%
SO <sub>2</sub>	1-hour mean, not to be exceeded more than 24 times per year (equivalent to 99.73 percentile)	350	R5		52.71	15%	55.96	16%
SO <sub>2</sub>	24-hour mean not to be exceeded more than 3 times a year (equivalent to 99.18 percentile)	125	R5		25.28	20%	28.54	23%
SO <sub>2</sub>	15-minute mean, not to be exceeded more than 35 times a year (equivalent to 99.9 percentile)	266	R6		59.11	22%	62.12	23%
HCl	1-hour	750	R108		370.14	49%	370.35	49%
HF (human)	1-hour	160	R108		18.51	11.6%	24.51	15%
Group metals - Cadmium	1-hour	1.5	R108		0.03	2%	0.03	2%



Pollutant	Averaging Period	AQAL ( $\mu\text{g m}^{-3}$ )	Receptor which maximum occurs	at PC	Maximum PC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of AQAL	Maximum PEC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of AQAL
Group metals Mercury	2 - 1-hour	7.5	R108		0.03	0.4%	0.03	0.4%
Group metals Arsenic	3 - 1-hour	15	R108		<0.01	0.01%	<0.01	0.01%
Group metals Chromium III	3 - 1-hour	150	R108		<0.01	<0.01%	<0.01	<0.01%
Group metals Copper	3 - 1-hour	200	R108		<0.01	<0.01%	<0.01	<0.01%
Group metals Manganese	3 - 1-hour	1500	R108		<0.01	<0.01%	<0.01	<0.01%
Group metals nickel	3 - 1-hour	30	R108		<0.01	0.01%	<0.01	0.01%
Group metals Vanadium	3 - 1-hour	1	R108		0.01	1.00%	0.01	1.20%

## Odour

6.3.3 **Table 8B6.10 Maximum modelled odour concentration at human Receptors during abnormal operation** presents the summary odour results during the abnormal operational scenario whereby the combustion unit is shut down and either building air will continue to be extracted via the primary air supplied to the other furnace or, in the event that both furnaces are shutdown, building air would be extracted and vented through carbon filters, before being released to atmosphere, or a permanently installed odour neutralisation system will be deployed. Results are presented for the specific Receptor experiencing the maximum process contribution.

**Table 8B6.10 Maximum modelled odour concentration at human Receptors during abnormal operation**

Pollutant	Guideline ( $\text{ou}_E \text{m}^{-3}$ )	98th Percentile 1-hour mean odour concentration, $C_{98-1hr}$ ( $\text{ou}_E \text{m}^{-3}$ )	% $C_{98-1hr}$ of Guideline
Odour	1.5	1.43	95.43%



## Ecological Receptors

6.3.4 **Table 8B6.11 Impact to air quality at ecological Receptors at internationally designated biodiversity sites at abnormal operation** presents predicted pollutant concentrations at abnormal operation compared to critical levels and deposition compared to critical loads at internationally designated biodiversity sites.

6.3.5 **Table 8B6.12 Impact to air quality at ecological Receptors at Local Wildlife sites at abnormal operation** presents predicted pollutant concentrations at abnormal operation compared to critical levels and deposition compared to critical loads at LWS.

**Table 8B6.11 Impact to air quality at ecological Receptors at internationally designated biodiversity sites at abnormal operation**

Pollutant	Averaging Period	Critical level ( $\mu\text{g m}^{-3}$ )	Receptor at which maximum PC occurs	Maximum PC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of critical level	Maximum PEC ( $\mu\text{g m}^{-3}$ )	Maximum PEC as a % of critical level
NO <sub>x</sub>	Daily	200	E12	4.0	2%	23.3	12%
HF (ecological Receptors)	24-hour	5	E12	0.15	3%	6.15	1.2%

**Table 8B6.12 Impact to air quality at ecological Receptors at Local Wildlife sites at abnormal operation**

Pollutant	Averaging Period	Critical level ( $\mu\text{g m}^{-3}$ )	Receptor at which maximum PC occurs	Maximum PC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of critical level
NO <sub>x</sub>	Daily	200	E8	32.63	16%
HF	24-hour	5	E1	0.53	11%

## 6.4 Emergency scenario

6.4.1 An emergency diesel generator is provided to shut down the plant safely in the event of total power loss. **Table 8B6.13 Summary model results for human Receptor experiencing maximum process contribution in emergency scenario** details the results of the impact assessment for the specific human Receptor considered in an emergency scenario that experiences the maximum process contribution.



**Table 8B6.13 Summary model results for human Receptor experiencing maximum process contribution in emergency scenario**

Pollutant	Averaging Period	AQAL ( $\mu\text{g m}^{-3}$ )	Receptor at which maximum PC occurs	Maximum PC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of AQAL	Maximum PEC ( $\mu\text{g m}^{-3}$ )	Maximum PC as a % of AQAL
<b>NO<sub>2</sub></b>	1-hour mean, no more than 18 exceedances a year (equivalent of 99.79 Percentile)	200	R83	50.98	25%	73.90	37%



## 7. Conclusion

- 7.1.1 This report presents the technical methodology used to assess point source emissions to air during normal, abnormal and emergency operational scenarios for the EfW CHP Facility. It also presents the methodology for the traffic emission dispersion modelling undertaken to calculate the contribution of traffic emissions associated with the Proposed Development on local air quality. The assessment has used detailed dispersion modelling to predict concentrations and deposition rates of a number of air pollutants that may be emitted from the chimneys and odour control unit at a number of human and ecological Receptor locations in the vicinity of the Proposed Development. The assessment also assessed potential metal deposition on land as well as human health risk assessment to assess potential impacts from emissions of dioxins and furans.
- 7.1.2 The assessment has incorporated a number of worst-case assumptions, which likely resulted in an overestimation of the predicted ground level impact. As a result of these worst-case assumptions, the predicted results should be considered the upper limit of model uncertainty for a scenario where the actual site impact is determined.
- 7.1.3 Results presented within the report are provided on a factual basis and without interpretation. Assessment of the significance of these results is made within the main body of the ES chapter (**Chapter 8: Air Quality Volume 6.2**).



# Annex A

## Model Checklist

**Table 8B.A1 Modelling checklist**

Item	✓/✗	Reason for Omission
Location Map (ES Figure 1.1 Site location)	✓	
Site Plan (ES Figure 3.6 EfW Facility Site Layout)	✓	
List of pollutants modelled and relevant air quality guidelines	✓	
Details of modelled scenarios	✓	
Details of relevant ambient concentrations used	✓	
Model description and justification	✓	
Special model treatments used	✓	
Table of emission parameters used	✓	
Details of modelled domain and Receptors	✓	
Details of meteorological data used, including origin, and justification	✓	
Details of terrain treatment	✓	
Details of buildings treatment	✓	
Details of modelling wet/dry deposition	✓	
Sensitivity analysis	✓	
Assessment of impacts	✓	
Model input files	✓	





# Annex B

## Monitoring Survey

**Table 8B** presents monitoring data collected by Wood in 2021. Diffusion tubes, exposed in triplicate, were analysed by UKAS accredited laboratory Gradko using a 50% TEA in water analysis method. The table includes bias adjusted and annualised annual mean concentrations. The bias adjustment and annualisation methods are presented in the following section.

An automatic monitor was installed at Thomas Clarkson Academy in June 2021 (site 14). Air quality measurements from the automatic monitor were validated and ratified by Air Quality Data Management (AQDM) to the standards described in the LAQM.TG(16), the monitor records NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations. Monitored concentrations are presented in **Table 8B**.



**Table 8B.B1 2021 Diffusion tubes monitoring data**

Site	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Data Capture %	Raw Average	Bias Adjusted (0.69) and Annualised
1	20.4	19.5	13.8	12.4	10.4	8.6	-	9.3	14.9	-	-	-	67%	13.7	9.8
2	-	16.0	13.4	12.5	10.9	9.7	9.3	9.5	12.3	13.5	17.3	-	83%	12.4	8.6
3	20.0	16.4	13.3	12.2	10.8	9.8	8.7	9.6	11.8	13.4	-	-	83%	12.6	8.7
4	16.2	35.4	26.9	28.5	30.5	26.0	-	24.5	34.0	32.1	33.5	-	83%	28.8	19.8
5	32.6	26.3	30.3	28.5	24.3	25.3	23.0	20.1	26.3	23.3	30.6	-	92%	26.4	18.2
6	20.4	17.5	15.7	17.0	14.0	14.2	12.9	12.4	14.8	13.8	17.9	-	92%	15.5	10.7
7	31.4	26.0	21.5	24.3	19.4	18.7	19.2	16.0	23.2	22.2	28.2	-	92%	22.7	15.7
8	30.4	31.4	22.1	23.7	24.2	17.2	20.3	14.8	26.7	25.3	28.0	-	92%	24.0	16.6
9	25.0	20.8	18.6	-	-	-	-	-	16.3	17.5	21.6	-	50%	20.0	11.8
10	21.3	23.3	18.6	15.1	17.2	14.3	15.6	13.1	19.4	19.1	22.3	-	92%	18.1	12.5
11	33.1	32.9	30.5	30.6	31.1	28.6	31.0	25.3	33.9	33.0	33.5	-	92%	31.2	21.5
12	30.7	24.8	23.1	20.1	20.4	18.3	16.3	17.5	19.7	22.6	28.3	-	92%	22.0	15.2
13	41.6	49.2	40.7	50.1	40.9	47.6	39.6	35.2	44.2	-	-	-	75%	43.2	29.8
14	-	-	-	-	-	-	-	11.4	13.9	17.8	20.4	-	33%	15.9	11.8



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**Table 8B.B2 2021 Automatic monitor monitoring data**

Pollutant	2021 Data capture	2021 Raw average	2021 Annualised average	Exceedance of short term AQO
NO <sub>2</sub>	58%	10.2	11.3	0
PM <sub>10</sub>	55%	15.6	15.8	0
PM <sub>2.5</sub>	54%	9.8	9.9	0

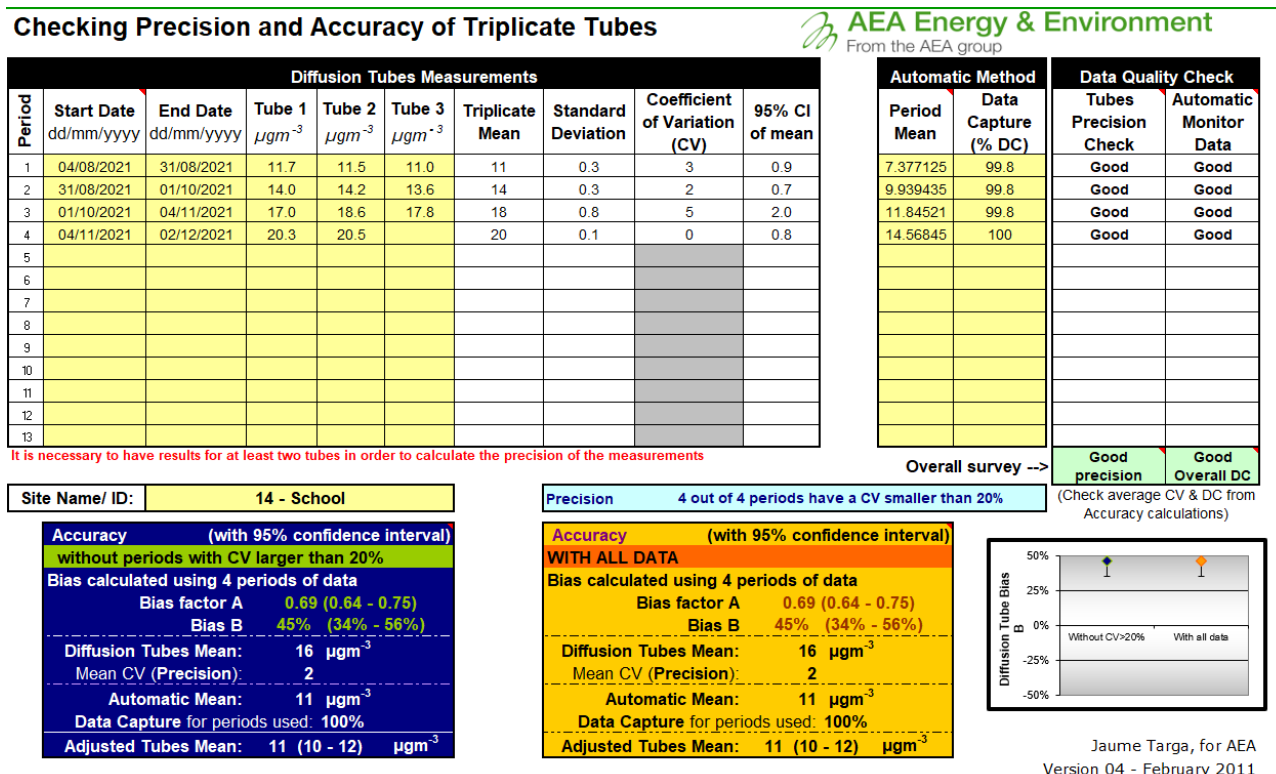


## Bias adjustment

A co-location study with a triplicate diffusion tube site and an automatic monitor was undertaken from August to November 2021 at site 14 located at Thomas Clarkson Academy in a background location.

A bias adjustment factor of 0.69 was determined using Defra’s Diffusion Tube Precision Accuracy Bias Spreadsheet as shown in **Graphic 8B.B1**.

### Graphic 8B.B1 Bias Adjustment Factor



## Annualisation

Data capture at all sites which recorded less than 75% data capture during 2021 has been annualised according to the method set out in Boxes 7.9 and 7.10 of LAQM.TG(16).

NO<sub>2</sub> diffusion tube concentrations were annualised using automatic monitoring data from three stations with a data capture above 85%. The selected monitoring sites are in background locations to avoid any very local effects that may occur at Urban Centre, Roadside or Kerbside sites. 2021 automatic monitoring data was obtained from the Air Quality England website<sup>25</sup>. The details of the annualisation have been provided in **Table 8B..**

Background monitoring sites used for annualisation are referred to as follows:

- A: Breckland East Wretham

<sup>25</sup> <https://www.airqualityengland.co.uk/>



- B: South Holland Westmere School
- C: South Holland Spalding Monkhouse

**Table 8B.B3 Annualisation factors**

Site	2021 Data capture %	Factor A	Factor B	Factor B	Factor average
1	67%	1.01	1.05	1.04	1.03
9	50%	0.91	0.84	0.83	0.86
14 diffusion tube	33%	1.03	1.08	1.12	1.07
14 automatic NO <sub>2</sub>	58%	1.04	1.13	1.15	1.10
14 automatic PM <sub>10</sub>	55%	1.02	0.99	1.03	1.01

Note: The PM<sub>10</sub> annualisation factor was also used to adjust the PM<sub>2.5</sub> concentration



# Annex C

## Modelled Receptors

**Table 8B.C1 Discrete Receptor points**

ID	X	Y	Address
R1	544893	308134	North Brink, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 4TS, United Kingdom
R2	545470	307688	New Bridge Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0SH, United Kingdom
R3	545714	307525	New Bridge Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0SU, United Kingdom
R4	545990	307496	Wisbech Bypass, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0SU, United Kingdom
R5	545303	307417	Wisbech Bypass, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0SU, United Kingdom
R6	544870	307641	Smith's Farm Shop, Cromwell Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0SD, United Kingdom
R7	544800	307373	Redmoor Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0RW, United Kingdom
R8	545353	308533	Formula One Autocentres, Cromwell Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0SS, United Kingdom
R9	545503	308718	Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0TF, United Kingdom
R10	545384	308946	North Brink, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1LN, United Kingdom
R11	545636	308951	Malt Drive, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0SS, United Kingdom
R12	545204	309336	Barton Road Recreation Ground, Magazine Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1LG, United Kingdom
R13	545042	308999	Magazine Close, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1LH, United Kingdom
R14	544594	308277	Mile Tree Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 4TR, United Kingdom



ID	X	Y	Address
R15	544691	307854	North Brink, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 4TS, United Kingdom
R16	546163	307981	New Drove, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SA, United Kingdom
R17	546337	308172	New Drove, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RZ, United Kingdom
R18	546501	308285	New Drove, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RZ, United Kingdom
R19	546513	308354	Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom
R20	546407	308357	Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom
R21	546466	308373	Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom
R22	546635	308509	Corporation Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RY, United Kingdom
R23	546657	308442	Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom
R24	546716	308483	Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom
R26	546746	308527	Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SF, United Kingdom
R27	546584	308379	Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom
R28	546615	308142	Half Penny Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SB, United Kingdom
R29	546498	308604	Thomas Clarkson Academy, Corporation Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RX, United Kingdom
R30	547085	307849	Elm High Road, Emneth, King's Lynn and West Norfolk, Norfolk, East of England, England, PE14 0DT, United Kingdom
R31	547087	307765	Low Road, Elm, Cambridgeshire, East of England, England, PE14 0DD, United Kingdom



ID	X	Y	Address
R32	547185	307795	Westfields Hotel, Elm High Road, Emneth, Elm, Norfolk, East of England, England, PE14 0DD, United Kingdom
R33	547049	307920	Elm High Road, adj, Elm High Road, Emneth, King's Lynn and West Norfolk, Norfolk, East of England, England, PE14 0DT, United Kingdom
R34	546920	307973	Elm Low Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0DT, United Kingdom
R35	546955	308080	Elm High Road, opp, Elm High Road, Emneth, Wisbech, King's Lynn and West Norfolk, Norfolk, East of England, England, PE14 0DG, United Kingdom
R36	546909	308228	Michael Wicks, Elm High Road, Emneth, Wisbech, King's Lynn and West Norfolk, Norfolk, East of England, England, PE14 0DG, United Kingdom
R37	546906	308359	Elm High Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0DG, United Kingdom
R38	546882	308449	Elm High Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SJ, United Kingdom
R39	546817	308478	Elm High Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SQ, United Kingdom
R40	546752	308630	Corporation Road, Elm Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SG, United Kingdom
R41	546828	308561	Churchill Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SQ, United Kingdom
R42	546799	308660	Churchill Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2DN, United Kingdom
R43	546769	308761	Churchill Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2DN, United Kingdom
R44	546657	308905	Elm Road Day Nursery, Elm Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2TB, United Kingdom
R45	546707	309055	College of West Anglia (Isle Campus), Ramnoth Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2BB, United Kingdom
R46	546473	309071	Elm Road Primary School, Chapel Street, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2LT, United Kingdom
R47	546503	309264	Norfolk St, Churchill Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2NE, United Kingdom





ID	X	Y	Address
R48	546530	309375	The Nene School, Earl Street, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2AF, United Kingdom
R49	546400	309526	Subway, Orange Grove, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1LY, United Kingdom
R50	546402	309722	North Cambridgeshire Hospital, Churchill Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 3BJ, United Kingdom
R51	546362	309836	North Cambridgeshire Hospital, Churchill Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 3BJ, United Kingdom
R52	546333	309890	Churchill Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 3BJ, United Kingdom
R53	546103	309748	Tasty China, Nene Quay, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1AQ, United Kingdom
R54	545963	309616	Octavia Hill's Birthplace House, South Brink Place, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1JE, United Kingdom
R55	546303	309559	St Peter & St Paul, Church Terrace, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1BJ, United Kingdom
R56	546479	309149	Wisbech Salvation Army, John Thompson Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2NF, United Kingdom
R57	546347	308745	86, Railway Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2UP, United Kingdom
R58	546174	308887	1, Railway Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2UP, United Kingdom
R59	545904	308922	Victory Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2PU, United Kingdom
R60	545535	309382	61, North Brink, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1LN, United Kingdom
R61	546082	309088	Station Drive, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2PP, United Kingdom
R62	546324	309152	Artillery Street, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2QP, United Kingdom
R63	546051	309282	Langley Lodge, Queens Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2QR, United Kingdom



ID	X	Y	Address
R64	546230	309374	Church Terrace Car Park, Kings Walk, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1HU, United Kingdom
R65	546427	309434	Orange Grove, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2FL, United Kingdom
R66	546118	309618	Evison's, York Row, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1DD, United Kingdom
R67	546585	306969	Limes Avenue, Elm, Cambridgeshire, East of England, England, PE14 0BG, United Kingdom
R68	545444	306513	Redmoor Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0RW, United Kingdom
R69	544354	307376	Lord's Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 4TU, United Kingdom
R70	542313	308255	Station Road, Wisbech St. Mary, Wisbech St Mary, Fenland, Cambridgeshire, East of England, England, PE13 4RY, United Kingdom
R71	543829	308534	Mile Tree Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 4TR, United Kingdom
R72	547284	308819	Meadowgate School, Meadowgate Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SX, United Kingdom
R73	547421	308514	Meadowgate Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2UQ, United Kingdom
R74	547124	309626	Boyces Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2JT, United Kingdom
R75	545647	310335	Peckover Primary School, Leverington Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 1RZ, United Kingdom
R76	547348	307519	Elm High Road, Emneth, King's Lynn and West Norfolk, Norfolk, East of England, England, PE14 0DP, United Kingdom
R77	544127	307031	North Brink, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 4UN, United Kingdom
R78	545949	307761	New Drove, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2SA, United Kingdom
R79	546182	308458	Belinda's Cafe, Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom



ID	X	Y	Address
R80	546766	309266	Ramnoth County Junior School, Ramnoth Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2BB, United Kingdom
R81	546940	309124	Glennfield Care Centre, Money Bank, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2JG, United Kingdom
R82	546669	308852	Elm Road, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2DN, United Kingdom
R83	545376	307784	New Bridge Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE14 0SE, United Kingdom
R84	546131	308428	TBAP Unity Academy, Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom
R85	546154	308467	TBAP Unity Academy, Weasenham Lane, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2RU, United Kingdom
R86	546020	308308	Algores Way, Wisbech, Fenland, Cambridgeshire, East of England, England, PE13 2TQ, United Kingdom
R87	546774	309082	Isle College, Ramnoth Road, Wisbech, Cambridgeshire, PE13 2JE
R88	546583	308578	Thomas Clarkson Academy, Corporation Road, Wisbech, Cambridgeshire PE13 2SE
R89	546285	310028	27 - 29 Lynn Road, Wisbech, Cambridgeshire, PE13 3DD
R90	546550	309349	Wisbech South Childrens Centre Elizabeth Terrace, Wisbech, Cambridgeshire, PE13 2AQ
R91	546569	309387	Little Owls Daycare, The Nene Infant School, Norwich Road, Wisbech, Cambridgeshire, PE13 2AP
R92	547286	310112	255 Norwich Road, Wisbech, Cambridgeshire, PE13 3UZ
R93	547450	310513	39 Kirkgate Street, Wisbech, Cambridgeshire, PE13 3QS
R94	545690	308892	Enterprise House, Oldfield Lane, Wisbech, Cambridgeshire, PE13 2RJ
R95	545934	309608	Old Sessions House, Somers Road, Wisbech, Cambridgeshire, PE13 1JF
R96	546110	308436	2 Algores Way, Wisbech, Cambridgeshire, PE13 2TQ
R97	546760	309249	Ramnoth Junior School, Ramnoth Road, Wisbech, Cambridgeshire, PE13 2JB



ID	X	Y	Address
R98	546460	309091	Elm Road Primary School, Elm Road, Wisbech, Cambridgeshire, PE13 2TB
R99	546558	309393	The Nene Infant School Academy, Norwich Road, Wisbech, Cambridgeshire, PE13 2AP
R100	547117	310278	Clarkson Infants School, Trafford Road, Wisbech, Cambridgeshire, PE13 2ES
R101	547109	310206	St Peters Church Of England Aided Junior School, Trafford Road, Wisbech, Cambridgeshire, PE13 2ES
R102	545660	310345	Peckover Primary School, Leverington Road, Wisbech. Cambridgeshire PE13 1PJ
R103	547284	308832	Meadowgate Academy. Meadowgate Lane. Wisbech, Cambridgeshire PE13 2JH
R104	546498	311073	Orchards Church Of England Primary School, Cherry Road, Wisbech, Cambridgeshire, PE13 2DJ
R105	545629	309521	Wisbech Grammar School, 46 - 48 North Brink, Wisbech, Cambridgeshire PE13 1JX
R106	545799	309450	The County School Fenland Learning Base, Coalwharf Road, Wisbech, Cambridgeshire, PE13 2FP
R107	546008	308312	10 Algores Way, Wisbech, Cambridgeshire, PE13 2TQ
R108	545852	308047	Unit 3, Anglia Way, Wisbech, Cambridgeshire, PE13 2TY
R109	546242	309568	4 Museum Square, Wisbech, Cambridgeshire, PE13 1ES
R110	546128	309492	Alexandra Road Dental Practice, 11 - 12 Alexandra Road, Wisbech, Cambridgeshire, PE13 1HQ
R111	546326	309682	1 - 4 Church Mews, Wisbech, Cambridgeshire, PE13 1HL
R112	545969	309757	2 - 4 Exchange Square, Wisbech, Cambridgeshire, PE13 1RA
R113	546435	309768	Fenland Primary Care Trust, 27 St Augustines Road, Wisbech, Cambridgeshire, PE13 3AD
R114	546432	309751	Trinity Surgery. 29 St Augustines Road, Wisbech, Cambridgeshire, PE13 3AD
R115	546331	310143	Clarkson Surgery, De Havilland Road, Wisbech, Cambridgeshire, PE13 3AN



ID	X	Y	Address
R116	545005	307776	Anglia Community Eye Service, Cromwell Road, Wisbech, Cambridgeshire, PE14 0SN
R117	545925	309678	Surgery, 7 - 9 North Brink, Wisbech, Cambridgeshire, PE13 1JU
R118	545931	309675	7 North Brink, Wisbech, Cambridgeshire, PE13 1JU
R119	546435	309666	North Cambridgeshire Hospital, St Augustines Road, Wisbech, Cambridgeshire, PE13 3AB
R120	545940	309677	6 North Brink, Wisbech, Cambridgeshire, PE13 1JR
R121	546599	309324	7 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R122	546587	309324	10 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R123	546601	309308	21 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R124	546614	309309	27 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R125	546429	309247	20 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R126	546425	309245	21 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R127	546424	309241	22 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R128	546421	309240	23 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R129	546391	309216	1 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R130	546393	309217	10 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R131	546398	309218	11 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R132	546400	309219	12 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R133	546402	309219	13 Smedley Trust Home, West Street, Wisbech Cambridgeshire, PE13 2QY
R134	546404	309220	14 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R135	546406	309221	15 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY



ID	X	Y	Address
R136	546389	309214	16 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R137	546392	309214	2 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R138	546393	309215	3 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R139	546396	309216	4 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R140	546398	309216	5 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R141	546399	309217	6 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R142	546401	309217	7 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R143	546403	309218	8 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R144	546405	309218	9 Smedley Trust Home, West Street, Wisbech, Cambridgeshire, PE13 2QY
R145	546606	309341	2 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R146	546603	309337	4 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R147	546599	309329	6 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R148	546597	309321	8 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R149	546582	309326	11 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R150	546578	309329	12 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R151	546573	309329	14 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R152	546572	309323	15 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R153	546580	309320	18 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R154	546598	309310	20 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R155	546605	309306	22 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R156	546610	309303	24 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF



ID	X	Y	Address
R157	546612	309306	26 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R158	546610	309311	28 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R159	546606	309314	29 Boyden Court, Wisbech, Cambridgeshire, PE13 2AF
R160	546496	309257	1 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R161	546497	309254	2 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R162	546497	309245	3 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R163	546498	309244	4 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R164	546497	309252	5 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R165	546499	309242	6 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R166	546499	309241	7 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R167	546498	309250	8 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R168	546500	309239	9 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R169	546500	309236	10 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R170	546499	309248	11 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R171	546496	309247	12 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R172	546505	309237	13 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R173	546499	309246	14 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R174	546500	309244	15 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R175	546501	309243	16 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R176	546501	309241	17 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R177	546502	309239	18 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE



<b>ID</b>	<b>X</b>	<b>Y</b>	<b>Address</b>
R178	546503	309237	19 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R179	546498	309258	20 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R180	546498	309256	21 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R181	546499	309255	22 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R182	546499	309253	23 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R183	546499	309252	24 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R184	546500	309250	25 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R185	546501	309248	26 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R186	546501	309246	27 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R187	546502	309244	28 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R188	546502	309242	29 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R189	546503	309241	30 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R190	546504	309239	31 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R191	546496	309256	32 Onyx Court, Wisbech, Cambridgeshire, PE13 2NE
R192	546355	309424	15 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R193	546356	309423	16 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R194	546357	309424	17 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R195	546358	309424	18 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R196	546357	309422	19 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R197	546358	309423	20 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R198	546355	309426	21 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU





ID	X	Y	Address
R199	546357	309426	22 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R200	546331	309419	1 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R201	546334	309421	2 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R202	546336	309423	3 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R203	546333	309418	4 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R204	546335	309419	5 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R205	546338	309422	6 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R206	546339	309427	7 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R207	546340	309429	8 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R208	546342	309431	9 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R209	546339	309426	10 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R210	546344	309433	11 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R211	546344	309426	12 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R212	546345	309428	13 King Johns House, Kings Walk, Wisbech, Cambridgeshire. PE13 1HU
R213	546347	309431	14 King Johns House, Kings Walk, Wisbech, Cambridgeshire, PE13 1HU
R214	545859	309477	1 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R215	545856	309479	2 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R216	545852	309483	3 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R217	545848	309486	4 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R218	545844	309489	5 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R219	545841	309493	6 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA



<b>ID</b>	<b>X</b>	<b>Y</b>	<b>Address</b>
R220	545838	309497	7 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R221	545837	309485	8 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R222	545833	309481	9 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R223	545828	309478	10 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R224	545829	309473	11 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R225	545837	309502	12 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R226	545836	309506	13 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R227	545834	309509	14 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R228	545831	309512	15 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R229	545794	309489	16 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R230	545792	309493	17 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R231	545790	309499	18 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R232	545795	309498	19 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R233	545798	309500	20 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R234	545802	309501	21 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R235	545805	309503	22 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R236	545808	309505	23 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R237	545812	309508	24 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R238	545815	309509	25 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R239	545819	309513	26 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R240	545830	309515	27 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA



<b>ID</b>	<b>X</b>	<b>Y</b>	<b>Address</b>
R241	545828	309517	28 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R242	545833	309519	29 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R243	545837	309521	30 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R244	545840	309522	31 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R245	545842	309524	32 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R246	545845	309525	33 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R247	545847	309528	34 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R248	545851	309527	35 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R249	545849	309526	36 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R250	545847	309523	37 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R251	545839	309524	38 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R252	545853	309516	39 Somers Court, Somers Road, Wisbech, Cambridgeshire, PE13 2RA
R253	544518	309295	Castanea, Barton Road, Wisbech, Cambridgeshire, PE13 4TG
R254	545566	309898	50 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R255	545570	309878	51 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R256	545566	309871	52 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R257	545573	309864	53 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R258	545578	309873	54 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R259	545568	309876	55 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R260	545564	309867	56 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R261	545572	309859	57 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL



ID	X	Y	Address
R262	545577	309870	58 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R263	545569	309971	59 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R264	545557	309961	1 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R265	545557	309961	2 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R266	545557	309961	3 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R267	545557	309961	4 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R268	545557	309961	5 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R269	545557	309961	6 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R270	545557	309961	7 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R271	545557	309961	8 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R272	545557	309961	9 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R273	545557	309961	10 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R274	545557	309961	11 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R275	545557	309961	12 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R276	545557	309961	13 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R277	545557	309961	14 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R278	545557	309961	15 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R279	545557	309961	16 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R280	545557	309961	17 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R281	545557	309961	18 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R282	545557	309961	19 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL



ID	X	Y	Address
R283	545551	309959	20 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R284	545571	309897	39 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R285	545571	309897	40 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R286	545571	309897	41 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R287	545571	309897	42 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R288	545571	309897	43 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R289	545571	309897	48 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R290	545571	309897	49 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R291	545571	309897	47 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R292	545571	309897	44 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R293	545571	309897	45 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R294	545571	309897	46 Edina Court, 55 Harecroft Road, Wisbech, Cambridgeshire, PE13 1RL
R295	546716	310087	81 Clarkson Avenue, Wisbech, Cambridgeshire, PE13 2EA
R296	546893	309735	The Chestnuts, 169 Norwich Road, Wisbech, Cambridgeshire, PE13 3TA
R297	546971	309132	Glennfield Care Centre, Money Bank, Wisbech, Cambridgeshire, PE13 2JF
R298	546905	309129	Orchard House Nursing Home, 107 Money Bank, Wisbech, Cambridgeshire, PE13 2JF
R299	546272	308932	The Papworth Trust, 9 Larksfield, Wisbech, Cambridgeshire, PE13 2UW
R300	546267	308921	9A Larksfield, Wisbech, Cambridgeshire, PE13 2UW
R301	547483	310621	Dove Court, Jasmin Close, Wisbech, Cambridgeshire, PE13 3RN
R302	547300	310502	26 Lerowe Road, Wisbech, Cambridgeshire, PE13 3QH
R303	546698	310313	132 Lynn Road, Wisbech, Cambridgeshire, PE13 3DP



ID	X	Y	Address
R304	547451	310616	Dove Court, Kirkgate Street, Wisbech, Cambridgeshire, PE13 3QU
R305	545997	309336	Langley Lodge Rest Home, 26 Queens Road, Wisbech, Cambridgeshire PE13 2PE
R306	546186	309169	Farrow House, 59 Queens Road, Wisbech, Cambridgeshire, PE13 2PQ
R307	545189	308780	The Conifers, 134 North Brink, Wisbech, Cambridgeshire, PE13 1LL
R308	547154	309797	204 Norwich Road, Wisbech, Cambridgeshire, PE13 3TD
R309	546958	309173	95 Money Bank, Wisbech, Cambridgeshire, PE13 2JF
R310	547045	311128	Rose Lodge Care Home, Walton Road, Wisbech, Cambridgeshire PE13 3EP
R311	546269	308921	9B Larksfield, Wisbech, Cambridgeshire, PE13 2UW
R312	546271	308922	9C Larksfield, Wisbech, Cambridgeshire, PE13 2UW
R313	546274	308922	9D Larksfield, Wisbech, Cambridgeshire, PE13 2UW
R314	546274	308925	9E Larksfield, Wisbech, Cambridgeshire, PE13 2UW
R315	546273	308928	9F Larksfield, Wisbech, Cambridgeshire, PE13 2UW
R316	546955	310209	51 Tavistock Road, Wisbech, Cambridgeshire, PE13 2ER
R317	547394	310613	55 - 61 Kirkgate Street, Wisbech, Cambridgeshire, PE13 3QX
R318	547275	309850	The Staithe, Holmes Drive, Wisbech, Cambridgeshire, PE13 3TJ
R319	546090	309879	Wisbech Foyer 2 North Street Wisbech Cambridgeshire PE13 1NP
R320	547497	307508	125 Elm High Rd, Wisbech PE14 0DN
R321	547983	307237	34 Outwell Rd, Elm, Emneth, Wisbech PE14 0DU
R322	547838	307526	154 Church Rd, Emneth, Wisbech PE14 8AF
R323	547928	307367	19 Outwell Rd, Elm, Emneth, Wisbech PE14 0DU



<b>ID</b>	<b>X</b>	<b>Y</b>	<b>Address</b>
R324	548083	306995	45 Outwell Rd, Elm, Emneth, Wisbech PE14 0DU
R325	547966	307439	140A Church Rd, Emneth, Wisbech PE14 8AF
R326	548035	307351	135 Church Rd, Emneth, Wisbech PE14 8AF
R327	548210	307294	119 Church Rd, Emneth, Wisbech PE14 8AF
R328	548560	307352	81 Church Rd, Emneth, Wisbech PE14 8AF
R329	549011	307370	50 Church Rd, Emneth, Wisbech PE14 8AA
R330	548224	306681	82 Outwell Rd, Emneth, Wisbech PE14 0EF
R331	548497	309220	3-99 Broadend Rd, Wisbech PE14 7BQ
R332	548610	309296	77 Broadend Rd, Wisbech PE14 7BQ
R333	549436	312445	Common Rd N, Walton Highway, Wisbech PE14 7DG
R334	549610	312652	54 St Pauls Rd N, Walton Highway, Wisbech PE14 7DN
R335	549647	312568	109 St Paul's Rd S, Walton Highway, Wisbech PE14 7ER
R336	548337	309210	50 Broadend Rd, Wisbech PE14 7BQ
R337	548622	309212	84 Broadend Rd, Wisbech PE14 7BQ
R338	548559	309218	Unit 5 Broadend Rd, Wisbech PE14 7BQ



# Annex D

## Traffic Modelling

**Table 8B.D1 Traffic inputs for Baseline scenarios**

Road ID	Road Name	2021 Baseline		2024 Baseline		2027 Baseline	
		AADT	%HDV	AADT	%HDV	AADT	%HDV
1	Algores Way	2,917	6.9	3,021	7.1	3,122	7.1
2	New Bridge Lane	791	21.9	819	22.4	846	22.6
3	Cromwell Road (A47 to NBL)	14,775	6.4	16,141	6.0	16,650	6.0
4	Weasenham Lane (AL to EHR)	12,026	5.3	12,799	5.3	13,213	5.3
5	A1101 Elm High Road	19,125	5.8	20,154	5.9	20,813	5.9
6	A47 N (CR to EHR)	19,695	9.2	20,402	9.5	21,081	9.5
7	A47 N (EHR to LR)	18,284	9.0	19,432	9.0	20,062	9.1
8	A47 S (CR to Guyhirn)	23,703	9.4	25,046	9.5	25,862	9.5
9	Cromwell Road (WL to Town Center)	14,821	4.1	15,832	4.1	16,343	4.1



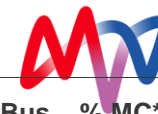


Road ID	Road Name	2021 Baseline		2024 Baseline		2027 Baseline	
		AADT	%HDV	AADT	%HDV	AADT	%HDV
10	Churchill Road	15,850	7.2	16,911	7.1	17,457	7.2
11	Weasenham Lane (CR to AW)	11,149	5.3	11,854	5.0	12,238	5.0
12	A47 (LR to A17)	23,938	7.1	25,289	7.1	26,114	7.2
13	Cromwell Road (NBL to WL)	14,215	6.1	15,560	5.7	16,050	5.8
14	A1101 Elm High Road (S of A47)	19,057	4.0	19,741	4.1	20,397	4.1
15	Church Lane (E of A1101)	2,955	2.7	3,061	2.7	3,163	2.8
16	Broadend Road (E of A47)	1,600	3.4	1,657	3.4	1,712	3.5
17	Broadend Road (W of A47)	2,140	3.2	2,216	3.3	2,290	3.3
18	A1101 (S of Church Lane)	11,737	7.0	12,158	7.2	12,562	7.2

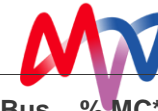


Table 8B.D2 Traffic inputs for 2024 with Construction and 2027 with Development scenarios

Road ID	Road Name	AADT	% Cars	% LGV	% HGV	% Bus and Coach	% MC*	AADT	% Cars	% LGV	% HGV	% Bus and Coach	% MC*
1	Algores Way	3,538	75.8	15.8	7.3	0.5	0.7	3,200	76.4	16.0	6.4	0.6	0.7
2	New Bridge Lane	944	55.3	11.5	31.1	1.6	0.5	1,130	47.6	10.0	40.6	1.4	0.4
3	Cromwell Road (A47 to NBL)	16,542	76.4	15.9	6.5	0.5	0.7	6,939	75.9	15.9	7.1	0.5	0.7
4	Weasenhams Lane (AW to EHR)	13,019	77.9	16.2	4.8	0.4	0.7	3,252	77.7	16.3	4.9	0.4	0.7
5	A1101 Elm High Road	20,279	77.3	16.1	5.4	0.5	0.7	20,851	77.2	16.2	5.4	0.5	0.7
6	A47 N (CR to EHR)	20,449	74.2	15.4	8.9	0.8	0.7	21,128	74.1	15.5	8.9	0.8	0.7
7	A47 N (EHR to LR)	19,552	74.6	15.5	8.5	0.7	0.7	20,103	74.5	15.6	8.5	0.7	0.7
8	A47 S	25,256	74.0	15.4	9.2	0.8	0.7	26,103	73.6	15.4	9.6	0.8	0.7



Road ID	Road Name	AADT	% Cars	% LGV	% HGV	% Bus and Coach	% MC*	AADT	% Cars	% LGV	% HGV	% Bus and Coach	% MC*
	(CR to Guyhirn)												
9	Cromwell Road (WL to Town Center)	15,978	78.8	16.4	3.7	0.3	0.7	16,377	78.7	16.5	3.8	0.3	0.7
10	Churchill Road	17,006	76.3	15.9	6.5	0.6	0.7	17,471	76.2	15.9	6.6	0.6	0.7
11	Weasenhams Lane (CR to AW)	12,151	77.7	16.2	5.0	0.4	0.7	12,278	78.0	16.3	4.6	0.4	0.7
12	A47 (LR to A17)	25,383	76.2	15.9	6.7	0.6	0.7	26,149	76.1	15.9	6.7	0.6	0.7
13	Cromwell Road (NBL to WL)	15,711	77.2	16.1	5.6	0.5	0.7	16,077	77.3	16.2	5.4	0.5	0.7
14	A1101 Elm High Road (S of A47)	19,760	78.8	16.4	3.7	0.3	0.7	20,428	78.7	16.5	3.8	0.3	0.7
15	Church Lane	3,061	79.9	16.6	2.5	0.2	0.7	3,163	79.8	16.7	2.5	0.2	0.7



Road ID	Road Name	AADT	% Cars	% LGV	% HGV	% Bus and Coach	% MC*	AADT	% Cars	% LGV	% HGV	% Bus and Coach	% MC*
	(E of A1101)												
16	Broaden d Road (E of A47)	1,662	79.3	16.5	3.2	0.3	0.7	1,712	79.2	16.6	3.2	0.3	0.7
17	Broaden d Road (W of A47)	2,220	79.5	16.5	3.0	0.3	0.7	2,290	79.4	16.6	3.0	0.3	0.7
18	A1101 (S of Church Lane)	12,177	76.2	15.9	6.6	0.6	0.7	12,593	76.0	15.9	6.8	0.6	0.7

\*MC: Motorcycle



# Annex E

## Chimney Height Modelling

The knee-point of the graph represented in **Graphic 8B6.1 Chimney height assessment of long-term NO<sub>2</sub> impacts at human Receptors** was calculated by identifying the gradient of the curve at this point. A knee point of a graph is described as the point in which the curve visibly bends.

The gradients of the slopes represented in **Graphic 8B6.1 Chimney height assessment of long-term NO<sub>2</sub> impacts at human Receptors** was calculated and is reported below:

- Graphic 8B6.1 gradient:  $y=5.92 \times 10^5 x^{-0.307}$

Following the guidance from the EA, the slope can also be calculated using the following equation:

- Slope=  $(y_2 - y_1) / (x_2 - x_1)$

This provided the following values for y for each figure:

- Graphic 8B6.1 gradient:  $y=-0.029$

The two expressions for the slope of each curve can be combined. The equations that resulted were then solved for x by finding the first derivative. The equation to solve the first derivative of an expression is provided below, followed by the final calculations for each figure, solving for x which is the chimney height at which the knee-point of each graph occurs.

Equation for the first derivative of an equation in the form  $f(x)=ax^n$ :

$$f'(x) = nax^{(n-1)}$$

$$\begin{aligned} -0.029 &= \frac{d}{dx} 592000 x^{-0.305} \\ -0.029 &= -592000 x^{-0.405} \\ 0.029 &= 592000 x^{-0.405} \\ 0.00000016 &= x^{-0.405} \\ x &= 84 \end{aligned}$$



# Annex F

## Model Sensitivity Tests

### Choice of dispersion model

Justification for the use of ADMS has previously been provided in Section 2.1. However, despite the limitations of AERMOD for this particular site application, sensitivity analysis has been undertaken to assess how model predictions might be affected if an alternative dispersion model, in this case AERMOD, had been selected.

Results are presented for each averaging period for which an AQO is established. Results have been normalised by the value obtained from the model resulting in the highest ground level process contribution at modelled Receptor locations for that averaging period, i.e., a value of 0.9 would indicate concentrations for that particular model and averaging period are 10% less than the model producing the highest concentration.

**Table 8B.F1 ADMS and AERMOD sensitivity analysis** presents the outcome of ADMS and AERMOD sensitivity analysis

**Table 8B.F1 ADMS and AERMOD sensitivity analysis**

Model	Annual mean	100%-ile mean	1-hour	99.79%-ile mean	1-hour	90.41%-ile	24-hour mean
ADMS	1.00	1.00		1.00		1.00	
AERMOD	0.60	0.53		0.53		0.52	

**Table 8B.F1 ADMS and AERMOD sensitivity analysis** demonstrates that ADMS produces higher maximum process contributions for all averaging periods and, therefore, is considered to be the more conservative model for this assessment. AERMOD's predictions range between 40-48% lower than the equivalent ADMS predictions. This is likely to be due to the more sophisticated treatment of terrain in the ADMS model.

### Building

Sensitivity analysis has been undertaken to identify whether including buildings within the model produces worst-case results. Models have been run with and without the inclusion of buildings for one year of meteorological data and maximum long-term and short-term NO<sub>2</sub> process contributions at modelled Receptor locations compared. The results of the sensitivity analysis are provided in **Table 8B.F2 Model sensitivity to buildings**. Results have been normalised by the value obtained from the model run resulting in the highest ground level concentration.



**Table 8B.F2 Model sensitivity to buildings**

Scenario	Annual mean	99.79%-ile 1-hour mean
<b>With Buildings</b>	1.00	1.00
<b>Without Buildings</b>	0.43	0.72

From **Table 8B.F2 Model sensitivity to buildings**, it is evident that the inclusion of buildings within the model results in worst-case predictions for both long-term and short-term means. For this reason, all subsequent results in this assessment have been produced with the inclusion of buildings in the model.

### Variable roughness

Sensitivity analysis has been undertaken to identify whether including variable roughness within the model produces worst-case results. Models have been run with and without the inclusion of variable roughness for one year of meteorological data and maximum long-term and short-term NO<sub>2</sub> process contributions at modelled Receptor locations compared. The results of the sensitivity analysis are provided in **Table 8B.F3 Model sensitivity to variable roughness**. Results have been normalised by the value obtained from the model run resulting in the highest ground level concentration.

**Table 8B.F3 Model sensitivity to variable roughness**

	Annual mean	99.79%-ile 1-hour mean
<b>With variable roughness</b>	1.00	1.00
<b>Without variable roughness (set to 1)</b>	0.63	0.95

From **Table 8B.F3 Model sensitivity to variable roughness**, it is evident that the inclusion of variable roughness within the model results in worst-case predictions for both long-term and short-term means. For this reason, all subsequent results in this assessment have been produced with the inclusion of variable roughness in the model.



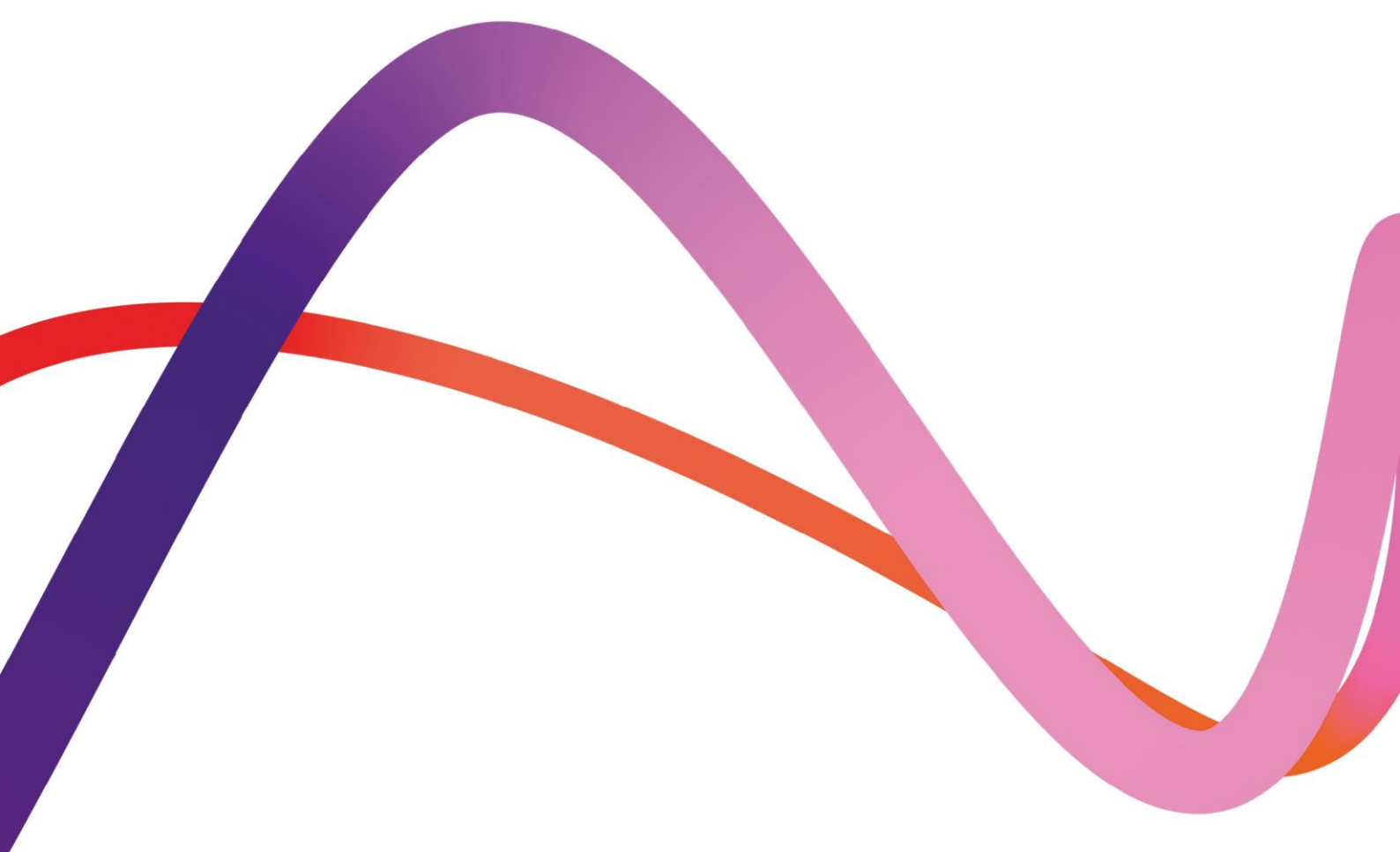
# Annex G

## Human Health Risk Assessment



# Medworth Energy from Waste Combined Heat and Power Facility

PINS ref. EN010110  
Document Reference: Vol 6.4  
Revision 1.0  
June 2022



## Environmental Statement Technical Appendix

### Human Health Risk Assessment

Regulation reference: The Infrastructure  
Planning (Applications: Prescribed  
Forms and Procedure) Regulations  
2009 Regulation 5(2)(a)

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## Executive summary

This report presents an assessment on the effects on human exposure from emissions to air from an Energy from Waste (EfW) Combined Heat and Power (CHP) Facility on land at Algores Way, Wisbech, Cambridgeshire. The EfW CHP Facility is designed to accept residual household and industrial and commercial (HIC) waste streams. Emissions to air from the Facility are released to atmosphere through two chimneys with a minimum height of 84m. This is considered a worst-case for the purpose of this assessment.

This Human Health Risk Assessment (HHRA) supplements the air quality assessment provided for the EfW CHP Facility. The HHRA only considers emissions to air as in this case human exposure to any harmful pollutants discharged directly to the aquatic environment and from solid waste disposal is considered to be negligible.

This assessment has been undertaken to support the DCO application and has been prepared in accordance with our understanding of the requirements of the Environment Agency for waste incineration plants. The Environment Agency requirements are for a human health risk assessment of dioxin/furan emissions from the EfW CHP Facility Site based on the US EPA HHRAP methodology in the absence of UK methods.

The possible impacts on human health arising from dioxins and furans (PCDD/F) and dioxin-like PCBs emitted from the EfW CHP Facility to the south of Wisbech are assessed under the worst case scenario, namely that of an individual exposed for a lifetime to the effects of the highest airborne concentrations and consuming mostly locally grown food. This equates to a hypothetical farmer consuming food grown on the farm, situated at the closest proximity to the facility. Where there are no active farming areas in close proximity, a residential Receptor is considered where it is assumed that the resident consumes locally grown vegetables.

The assessment identified and considered the most plausible pathways of exposure for the individuals considered (farmer and resident). Deposition and subsequent uptake of the compounds of potential concern (COPCs) into the food chain is likely to be the more numerically significant pathway over direct inhalation.

The risk assessment methodology used in this assessment has been structured so as to create worst-case estimates of risk. A number of features in the methodology give rise to this degree of conservatism. It has been demonstrated that for the maximally exposed individual, exposure to dioxins, furans and dioxin-like PCBs is not significant.



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# 1. Introduction

## 1.1 Background

1.1.1 Medworth CHP Limited (the Applicant) is applying to the Secretary of State (SoS) for a Development Consent Order (DCO) to construct operate and maintain an Energy from Waste (EfW) Combined Heat and Power (CHP) Facility on the industrial estate, Algores Way, Wisbech, Cambridgeshire. Together with associated Grid Connection, CHP Connection, Access Improvements, Water Connections, and Temporary Construction Compound (TCC), these works are the Proposed Development.

1.1.2 The Proposed Development would recover useful energy in the form of electricity and steam from over half a million tonnes of non-recyclable (residual), non-hazardous municipal, commercial and industrial waste each year. The Proposed Development has a generating capacity of over 50 megawatts and the electricity would be exported to the grid. The Proposed Development would also have the capability to export steam and electricity to users on the surrounding industrial estate. Further information is provided in **Chapter 3: Description of the Proposed Development (Volume 6.2)**.

1.1.3 The Proposed Development is a Nationally Significant Infrastructure Project (NSIP) under Part 3 Section 14 of the Planning Act 2008 (2008 Act) by virtue of the fact that the generating station is located in England and has a generating capacity of over 50 megawatts (section 15(2) of the 2008 Act). It, therefore, requires an application for a DCO to be submitted to the Planning Inspectorate (PINS) under the 2008 Act. PINS will examine the application for the Proposed Development and make a recommendation to the SoS for Business, Energy and Industrial Strategy (BEIS) to grant or refuse consent. On receipt of the report and recommendation from PINS, the SoS will then make the final decision on whether to grant the Medworth EfW CHP Facility DCO.

## 1.2 The Applicant and the project team

1.2.1 The Applicant is a wholly owned subsidiary of MVV Environment Limited (MVV). MVV is part of the MVV Energie AG group of companies. MVV Energie AG is one of Germany's leading energy companies, employing approx. 6,500 people with assets of around €5 billion and annual sales of around €4.1 billion. The Proposed Development represents an investment of approximately £450m.

1.2.2 The company has over 50-years' experience in constructing, operating, and maintaining EfW CHP facilities in Germany and the UK. MVV Energie's portfolio includes a 700,000 tonnes per annum residual EfW CHP facility in Mannheim, Germany.

1.2.3 MVV Energie has a growth strategy to be carbon neutral by 2040 and thereafter carbon negative, i.e., climate positive. Specifically, MVV Energie intends to:



- reduce its direct carbon dioxide (CO<sub>2</sub>) emissions by over 80% by 2030 compared to 2018;
- reduce its indirect CO<sub>2</sub> emissions by 82% compared to 2018;
- be climate neutral by 2040; and
- be climate positive from 2040.

1.2.4 MVV's UK business retains the overall group ethos of 'belonging' to the communities it serves whilst benefitting from over 50 years' experience gained by its German sister companies.

1.2.5 MVV's largest project in the UK is the Devonport EfW CHP Facility in Plymouth. Since 2015, this modern and efficient facility has been using around 265,000 tonnes of municipal, commercial and industrial residual waste per year to generate electricity and heat, notably for Her Majesty's Naval Base Devonport in Plymouth, and exporting electricity to the grid.

1.2.6 In Dundee, MVV has taken over the existing Baldovie EfW Facility and has developed a new, modern facility alongside the existing facility. Operating from 2021, it uses up to 220,000 tonnes of municipal, commercial and industrial waste each year as fuel for the generation of usable energy.

1.2.7 Biomass is another key focus of MVV's activities in the UK market. The biomass power plant at Ridham Dock, Kent, uses up to 195,000 tonnes of waste and non-recyclable wood per year to generate green electricity and is capable of exporting heat.

1.2.8 Gair Consulting Ltd has been commissioned, on behalf of Medworth CHP Ltd (the Applicant), by Wood to undertake an assessment to consider the effects on human exposure from emissions to air from an Energy from Waste (EfW) Combined Heat and Power (CHP) Facility on land at Algores Way, Wisbech, Cambridgeshire.

## 1.3 The Proposed Development

1.3.1 The Proposed Development comprises the following key elements:

- The EfW CHP Facility;
- CHP Connection;
- Temporary Construction Compound (TCC);
- Access Improvements;
- Water Connections; and
- Grid Connection.

1.3.2 A summary description of each Proposed Development element is provided below. A more detailed description is provided in **ES Chapter 3: Description of the Proposed Development (Volume 6.2)** of the ES. A list of terms and abbreviations can be found in **Chapter 1 Introduction, Appendix 1F Terms and Abbreviations (Volume 6.4)**.



- **EfW CHP Facility Site:** A site of approximately 5.3ha located south-west of Wisbech centred at National Grid Reference TF 45564 07955 and located within the administrative areas of Fenland District Council and Cambridgeshire County Council. The main buildings of the EfW CHP Facility would be located in the area to the north of the Hundred of Wisbech Internal Drainage Board (HWIDB) drain bisecting the site and would house many development elements including the tipping hall, waste bunkers, boiler house, turbine hall, air cooled condenser, air pollution control building, chimneys and administration building. The gatehouse, weighbridges, 132kV switching compound and laydown maintenance area would be located in the southern section of the EfW CHP Facility Site. Emissions to air from the Facility are released to atmosphere through two 84m (minimum height) chimneys (this is a worst-case given that the application allows for a height of up to 90m).
- **CHP Connection:** The EfW CHP Facility would be designed to allow the export of steam and electricity from the facility to surrounding business users via dedicated pipelines and private wire cables located along the disused March to Wisbech railway. The pipeline and cables would be located on a raised, steel structure.
- **TCC:** Located adjacent to the EfW CHP Facility Site, the compound would be used to support the construction of the Proposed Development. The compound would be in place for the duration of construction.
- **Access Improvements:** includes access improvements on New Bridge Lane (road widening and site access) and Algores Way (relocation of site access 20m to the south).
- **Water Connections:** A new water main connecting the EfW CHP Facility into the local network will run underground from the EfW CHP Facility Site along New Bridge Lane before crossing underneath the A47 (open cut trenching or horizontal directional drilling (HDD)) to join an existing Anglian Water main. An additional foul sewer connection is required to an existing pumping station operated by Anglian Water located to the northeast of the Algores Way site entrance and into the EfW CHP Facility Site.
- **Grid Connection:** This comprises a 132kV electrical connection using underground cables. The Grid Connection route begins at the 132kV switching compound in the EfW CHP Facility Site and runs underneath New Bridge Lane, before heading north within the verge of the A47 to the Walsoken Substation on Broadend Road. From this point the cable would be connected underground to the Walsoken DNO Substation.

## 1.4 Purpose of this Assessment

- 1.4.1 This Human Health Risk Assessment (HHRA) supplements the air quality assessment provided for the EfW CHP Facility. The HHRA only considers emissions to air as in this case human exposure to any harmful pollutants discharged directly to the aquatic environment and from solid waste disposal is considered to be negligible.



- 1.4.2 The area surrounding the EfW CHP Facility Site is dominated by industrial and commercial land but with agricultural land to the south. The nearest populated area is the southern edge of Wisbech to the north and east of the EfW CHP Facility Site. There are also isolated residential properties located along New Bridge Lane to the south of the EfW CHP Facility Site.
- 1.4.3 An air quality assessment of emissions from the EfW CHP Facility Site has been provided by the Applicant. The air quality assessment provides a comparison of predicted concentrations of pollutants at off-site locations with background air quality and air quality standards and guidelines for the protection of human health. The air quality assessment assumes the theoretical position that the maximum permissible emission limit values (ELVs), stipulated for legal compliance for the EfW CHP Facility, are emitted during all times of operation. This position is considered unlikely to be a realistic operating scenario because, in reality, the emissions will be lower.
- 1.4.4 Given the above theoretical operating scenario, the emissions from the EfW CHP Facility would contain a number of substances that cannot be evaluated in terms of their effects on human health simply by reference to ambient air quality standards. Health effects could occur through exposure routes other than purely inhalation. As such, an assessment needs to be made of the overall human *exposure* to the substances by the local population and then the *risk* that this exposure causes.
- 1.4.5 The operation of the EfW CHP Facility would be regulated by the Environment Agency under the Environmental Permitting Regulations. However, this assessment has been undertaken to support the DCO application and has been prepared in accordance with our understanding of the requirements of the Environment Agency (EA) for waste incineration plants. The EA requirements are for a human health risk assessment of dioxin/furan emissions from the EfW CHP Facility Site based on the US EPA HHRAP methodology in the absence of UK methods.
- 1.4.6 Human exposure to dioxins and furans has been compared against the Committee of Toxicity (COT) Tolerable Daily Intake (TDI) of 2 pg/kg per day. An assessment of exposure to dioxin-like polychlorinated biphenyls (PCBs) has also been included.
- 1.4.7 It should be noted that the former Her Majesty's Inspectorate of Pollution (HMIP) method does not have the capability to consider dioxin-like PCBs and the US EPA HHRAP method is limited in this respect. The HHRAP method does not contain physical properties or exposure parameters for individual dioxin-like PCBs but does provide information for two dioxin-like PCB mixtures (Aroclor 1016 and Aroclor 1254). Therefore, for these two substances typical emissions for dioxin-like PCBs have been included in the Industrial Risk Assessment Program (IRAP) model and these have been assumed to comprise entirely of Aroclor 1016 or Aroclor 1254 depending on which substance gives rise to the highest exposure.

## 1.5 Scope of the Assessment

- 1.5.1 The emissions from the EfW CHP Facility Site during the modelled operational scenario would contain a number of substances that cannot be evaluated in terms of their effects on human health simply by reference to ambient air quality standards. Health effects could occur through exposure routes other than purely inhalation. As





such, an assessment needs to be made of the overall human *exposure* to the substances by the local population and then the *risk* that this exposure causes.

1.5.2 The assessment presented here considers the potential impact of substances released by the EfW CHP Facility Site on the health of the local population at the point of maximum exposure. These substances are those that are 'persistent' in the environment and have several pathways from the point of release to the human Receptor. Essentially, they can be described as dioxins/furans and dioxin-like polychlorinated biphenyls (PCBs) and are present in extremely small quantities and are typically measured in mass units of nanograms ( $\text{ng} = 10^{-9} \text{ g}$ ), picograms ( $\text{pg} = 10^{-12} \text{ g}$ ) and femtograms ( $\text{fg} = 10^{-15} \text{ g}$ ).

1.5.3 Unlike substances such as nitrogen dioxide, which have short term, acute effects on the respiratory system, dioxins/furans and dioxin-like PCBs have the potential to cause effects through long term, cumulative exposure. A lifetime is the conventional period over which such effects are evaluated. A lifetime is taken to be 70-years.

1.5.4 The exposure scenarios used here represent highly unrealistic situations in which all exposure assumptions are chosen to represent a worst-case and should be treated as an extreme view of the risks to health. While individual high-end exposure estimates may represent actual exposure possibilities (albeit at very low frequency), the possibility of all high end exposure assumptions accumulating in one individual is, for practical purposes, never realised. Therefore, intakes presented here should be regarded as an extreme upper theoretical representation of exposure that would be over and above that which would actually be experienced by the real population in the locality.

## 1.6 Approach to the Assessment

1.6.1 The risk assessment process is based on the application of the US EPA Human Health Risk Assessment Protocol (HHRAP)<sup>1</sup>. This protocol has been assembled into a commercially available model, Industrial Risk Assessment Program (IRAP, Version 5.1.0) and marketed by Lakes Environmental of Ontario.

1.6.2 The approach seeks to quantify the *hazard* faced by the Receptor, the *exposure* of the Receptor to the substances identified as being a potential hazard and then to assess the *risk* of the exposure, as follows.

- *Quantification of the exposure*: an exposure evaluation determines the dose and intake of key indicator chemicals for an exposed person. The dose is defined as the amount of a substance contacting body boundaries (in the case of inhalation, the lungs) and intake is the amount of the substance absorbed into the body. The evaluation is based upon worst-case, conservative scenarios, with respect to the following:
  - ▶ location of the exposed individual and duration of exposure;
  - ▶ exposure rate; and

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<sup>1</sup> US EPA Office of Solid Waste (September 2005) Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities



- ▶ emission rate from the source.
- *Risk characterisation*: following the above steps, the risk is characterised by examining the toxicity of the chemicals to which the individual has been exposed and evaluating the significance of the calculated dose by a comparison of intakes with the tolerable daily intake (TDI) for dioxins/furans and dioxin-like PCBs.



## 2. Methodology for Estimating Exposure to Emissions

### 2.1 Introduction

2.1.1 An exposure assessment for the purposes of characterising the health impact of the EfW CHP Facility emissions requires the following steps:

- (1) Measurement or estimation of emissions from the source.
- (2) Modelling the fate and transport of the emitted substances through the atmosphere and through soil, water and biota following deposition onto land. Concentrations of the emitted chemicals in the environmental media are estimated at the point of exposure, which may be through inhalation or ingestion.
- (3) Calculation of the uptake of the emitted chemicals into humans coming into contact with the affected media and the subsequent distribution in the body.

2.1.2 With regard to Step (3), the exposure assessment considers the uptake of polychlorinated dibenzo-para-dioxins and polychlorinated dibenzofurans (PCDD/Fs, often abbreviated to 'dioxins/furans') and dioxin-like PCBs by various categories of human Receptors, which in this case refers to resident adult and child and farmer adult and child.

### 2.2 Potential Exposure Pathways

2.2.1 There are two primary exposure 'routes' where humans may come into contact with chemicals that may be of concern:

- direct, via inhalation; or
- indirect, via ingestion of water, soil, vegetation and animals and animal products that become contaminated through the food chain.

2.2.2 There are four other potential exposure pathways of concern following the introduction of substances into the atmosphere:

- ingestion of drinking water;
- dermal (skin) contact with soil;
- incidental ingestion of soil; and
- dermal (skin) contact with water.

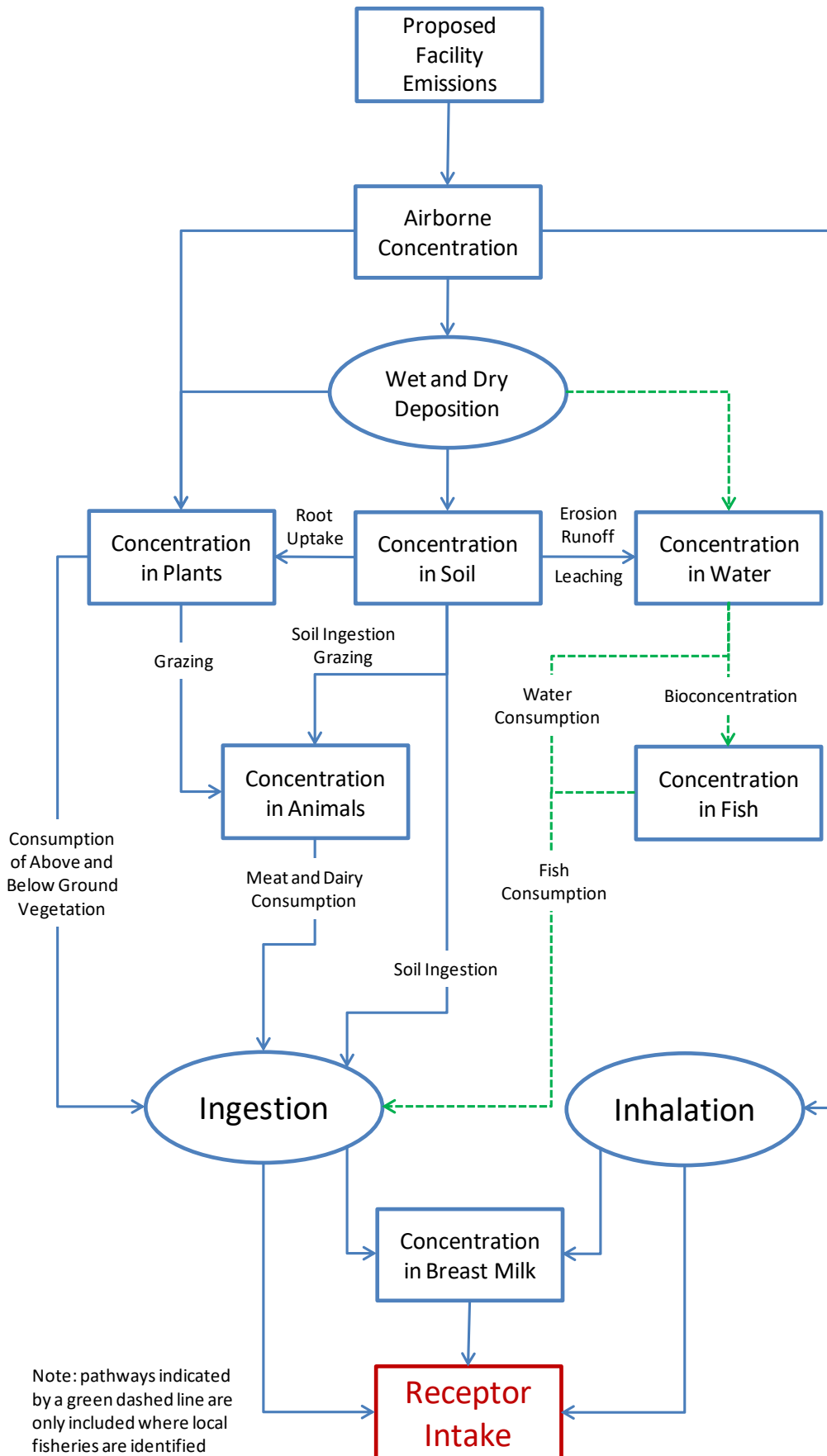


## 2.3 Exposure Pathways Considered in the Assessment

- 2.3.1 The possible exposure pathways included in the IRAP model are shown in **Graphic 2.1 Exposure Pathways for Receptors**. Dermal contact with soil is an insignificant exposure pathway on the basis of the infrequent and sporadic nature of the events and the very low dermal absorption factors for this exposure route, coupled with the low plausible total dose that may be experienced (when considered over the lifetime of an individual). Health risk assessments of similar emissions (Pasternach (1989) *The Risk Assessment of Environmental and Human Health Hazards*, John Wiley, New York) have concluded that dermal absorption of soil is at least one order of magnitude less efficient than lung absorption.
- 2.3.2 Similar arguments are relevant with respect to the elimination of aquatic pathways from consideration; swimming, fishing and other recreational activities are also sporadic and unlikely to lead to significant exposures or uptake of any contamination into the human body via dermal contact with water.
- 2.3.3 Exposure via drinking water requires contamination of surface drinking water sources local to the point of consumption. The likelihood of contamination reaching a level of concern in the local water sources and ground water supplies is extremely low, particularly where there is no large-scale storage (e.g., reservoirs) or catchment areas for local water supplies. However, the US EPA's HHRAP does include the ingestion of drinking water from surface water sources as a potential exposure pathway where water bodies and water sheds have been defined within the exposure scenario. The ingestion of groundwater as a source of local drinking water is not considered by the HHRAP as it is considered to be an insignificant exposure pathway for emissions derived from combustion processes.
- 2.3.4 The ingestion of drinking water from surface water sources is only considered a potential exposure pathway where there is a local surface water body which provides local drinking water. However, it is our experience that drinking water from a reservoir located close to this type of facility makes a very small contribution to the total exposure. Therefore, exposure via drinking water is generally only considered where there is the potential for exposure via the ingestion of fish and the presence of edible fish farms (e.g., trout or salmon farms).
- 2.3.5 On the basis of the assessment of the potential significance of the exposure pathways, the key exposure pathways which are relevant to the assessment and, hence, subject to examination in detail are as follows:
- inhalation;
  - ingestion of food; and
  - ingestion of soil.



Graphic 2.1 Exposure Pathways for Receptors





2.3.6 Therefore, the exposures arising from ingestion are assessed with reference to the following:

- milk from home-reared cows;
- eggs from home-reared chickens;
- home-reared beef;
- home-reared pork;
- home-reared chicken;
- home-grown vegetable and fruit produce;
- breastmilk; and
- soil (incidental).

2.3.7 The inclusion of all food groups in the assessment conservatively assumes that both arable and pasture land are present in the vicinity of the predicted maximum annual average ground level concentration. This is, in reality, a highly unlikely scenario, but it has been included as a means of building a high degree of conservatism into the assessment and, hence, reducing the risk of exposures being underestimated. However, it should be noted that not all exposure scenarios will result in the ingestion of home-reared meat and animal products and these food products are only considered by the HHRAP for farmers and the families of farmers.

2.3.8 Similarly, the ingestion of fish is only considered where there is a local water body that is used for fishing and where the diet of the fisher (and family) may be regularly supplemented by fish caught from these local water sources. There are no edible fish farms identified within 5km of the EfW CHP Facility Site. The nearest coarse fishery (Little Ranch Leisure near Begdale) is located 1.6km to the south. However, coarse fisheries are generally recreational fishing venues and coarse fish are not normally taken for consumption from these fisheries.

2.3.9 Therefore, the ingestion of locally caught edible fish from an inland closed water source has not been considered as consumption rates are likely to be very small.

## 2.4 Emissions and Dispersion Modelling Input Data

### Compounds of Potential Concern (COPCs)

2.4.1 The substances which have been considered in the assessment are referred to as the Compounds of Potential Concern (COPCs) and include the seventeen PCDD/F congeners that are known to be toxic (refer *Paragraph 2.4.4*). In addition, the IRAP model includes two dioxin-like PCBs (Aroclor 1016 and Aroclor 1254). These comprise a mixture of congeners with one to four chlorine atoms for Aroclor 1016 with a chlorine content of 41% by mass (average of three chlorine atoms). Similarly, Aroclor 1254 has between four and seven chlorine atoms and a chlorine content of 54% by mass (average of five chlorine atoms).



## Emission Parameters

2.4.2 Emissions from the EfW CHP Facility will be via two 84m high chimneys. Emission parameters assumed for the assessment are consistent with those used for the air quality assessment as follows:

- chimney height of 84m (metres) above ground level;
- flue diameter of 2.61m (per chimney);
- emission temperature of 150°C (degrees celcius) or 423 K (kelvin).
- emission velocity of 17.0m s<sup>-1</sup> (metres per second); and
- normalised flow rate per chimney of 62.2Nm<sup>3</sup> s<sup>-1</sup> (normal cubic metres per second at 273 K, dry and 11% O<sub>2</sub>).

2.4.3 The application allows for chimneys up to 90m in height. The lower height of 84m is considered to represent a worst-case for the purpose of this assessment.

## Emission Concentrations for the COPCs

2.4.4 The general term dioxins, denotes a family of compounds, with each compound composed of two benzene rings interconnected with two oxygen atoms. There are 75 individual dioxins, with each distinguished by the position of chlorine or other halogen atoms positioned on the benzene rings. Furans are similar in structure to dioxins, but have a carbon bond instead of one of the two oxygen atoms connecting the two benzene rings. There are 135 individual furan compounds. Each individual furan or dioxin compound is referred to as a congener and each has a different toxicity and physical properties with regard to its atmospheric behavior. It is important, therefore, that the exposure methodology determines the fate and transport of PCDD/Fs on a congener specific basis. It does this by accounting for the varying volatility of the congeners and their different toxicities. Consequently, information regarding the PCDD/F annual mean ground level concentrations on a congener specific basis is required.

2.4.5 For the purposes of the exposure assessment, the congener profile for the EfW CHP Facility is presented in **Table 2.1 PCDD/F Congener Profile for EfW CHP Facility Site**, which is a standard profile for municipal waste incinerators derived by Her Majesty's Inspectorate of Pollution (HMIP), one of the predecessors of the Environment Agency. The international toxic equivalency factors are given and used to derive the toxic equivalent emission (I-TEQ). It is assumed that PCDD/F emissions are 0.04ng I-TEQ Nm<sup>-3</sup> (reference conditions 273K, dry and 11% O<sub>2</sub>).

**Table 2.1 PCDD/F Congener Profile for the EfW CHP Facility Site**

Congener	Annual Mean Emission Concentration (ng Nm <sup>-3</sup> )	I-TEF toxic equivalent factors)	Annual Mean Emission Concentration (ng I-TEQ Nm <sup>-3</sup> ) (a)(b)
2,3,7,8-TCDD	0.0012	1.0	0.0012
1,2,3,7,8-PeCDD	0.010	0.5	0.0049



Congener	Annual Mean Emission Concentration (ng Nm <sup>-3</sup> )	I-TEF toxic equivalent factors)	Annual Mean Emission Concentration (ng I-TEQ Nm <sup>-3</sup> ) (a)(b)
1,2,3,4,7,8-HxCDD	0.012	0.1	0.0012
1,2,3,7,8,9-HxCDD	0.0084	0.1	0.00084
1,2,3,6,7,8-HxCDD	0.010	0.1	0.0010
1,2,3,4,6,7,8-HpCDD	0.068	0.01	0.00068
OCDD	0.16	0.001	0.00016
2,3,7,8-TCDF	0.011	0.1	0.0011
2,3,4,7,8-PeCDF	0.021	0.5	0.011
1,2,3,7,8-PeCDF	0.011	0.05	0.00056
1,2,3,4,7,8-HxCDF	0.087	0.1	0.0087
1,2,3,7,8,9-HxCDF	0.0016	0.1	0.00016
1,2,3,6,7,8-HxCDF	0.032	0.1	0.0032
2,3,4,6,7,8-HxCDF	0.035	0.1	0.0035
1,2,3,4,6,7,8-HpCDF	0.18	0.01	0.0018
1,2,3,4,7,8,9-HpCDF	0.016	0.01	0.00016
OCDF	0.16	0.001	0.00016
<b>Total (ng I-TEQ m<sup>-3</sup>)</b>			<b>0.04</b>
<b>(a) Congener profile from Table 7.2a DOE (1996) Risk Assessment of Dioxin Releases from Municipal Waste Incineration Processes Contract No. HMIP/CPR2/41/1/181, pro-rated to give 0.04 ng I-TEQ Nm<sup>-3</sup></b>			
<b>(b) Reference conditions of 273K, 1 atmosphere, dry and 11% O<sub>2</sub></b>			

2.4.6 Information on dioxin-like PCB emissions has been obtained from the Defra report WR 0608<sup>2</sup>. Based on the information provided, a maximum emission concentration of  $3.6 \times 10^{-9} \text{mg m}^{-3}$  is assumed. It is not stated in the Defra report whether this is total PCBs or dioxin-like PCBs. Therefore, as a worst-case it is assumed to comprise entirely of dioxin-like PCBs. Furthermore, it is assumed that this is the total PCB emission and that these data are presented as the toxic equivalent concentration (i.e.,  $3.6 \times 10^{-9} \text{mg TEQ Nm}^{-3}$ , equivalent to  $0.0036 \text{ ng I-TEQ Nm}^{-3}$ ). For the dioxin-like PCBs, a toxic equivalent factor (TEF) of 0.1 has been used to provide an actual emission concentration (i.e.,  $3.6 \times 10^{-8} \text{mg Nm}^{-3}$ ). The same equivalence factor has been used to convert the total actual dose back to the total toxic equivalent dose.

<sup>2</sup> WR 0608 Emissions from Waste Management Facilities, ERM Report on Behalf of Defra (July 2011)





2.4.7 The emission rates for each substance as input to the IRAP model are provided in **Table 2.2 PCDD/F Emission Rates used in the IRAP Model.**

**Table 2.2 PCDD/F Emission Rates used in the IRAP Model**

Congener	Emission Concentration (mg Nm <sup>-3</sup> )	Emission Rate (per Chimney) (g s <sup>-1</sup> )
2,3,7,8-TCDD	0.0012 x 10 <sup>-6</sup>	7.7 x 10 <sup>-11</sup>
1,2,3,7,8-PeCDD	0.010 x 10 <sup>-6</sup>	6.1 x 10 <sup>-10</sup>
1,2,3,4,7,8-HxCDD	0.012 x 10 <sup>-6</sup>	7.2 x 10 <sup>-10</sup>
1,2,3,7,8,9-HxCDD	0.0084 x 10 <sup>-6</sup>	5.2 x 10 <sup>-10</sup>
1,2,3,6,7,8-HxCDD	0.010 x 10 <sup>-6</sup>	6.5 x 10 <sup>-10</sup>
1,2,3,4,6,7,8-HpCDD	0.068 x 10 <sup>-6</sup>	4.2 x 10 <sup>-9</sup>
OCDD	0.16 x 10 <sup>-6</sup>	9.9 x 10 <sup>-9</sup>
2,3,7,8-TCDF	0.011 x 10 <sup>-6</sup>	7.0 x 10 <sup>-10</sup>
2,3,4,7,8-PeCDF	0.021 x 10 <sup>-6</sup>	1.3 x 10 <sup>-9</sup>
1,2,3,7,8-PeCDF	0.011 x 10 <sup>-6</sup>	7.0 x 10 <sup>-10</sup>
1,2,3,4,7,8-HxCDF	0.087 x 10 <sup>-6</sup>	5.4 x 10 <sup>-9</sup>
1,2,3,7,8,9-HxCDF	0.0016 x 10 <sup>-6</sup>	9.9 x 10 <sup>-11</sup>
1,2,3,6,7,8-HxCDF	0.032 x 10 <sup>-6</sup>	2.0 x 10 <sup>-9</sup>
2,3,4,6,7,8-HxCDF	0.035 x 10 <sup>-6</sup>	2.2 x 10 <sup>-9</sup>
1,2,3,4,6,7,8-HpCDF	0.18 x 10 <sup>-6</sup>	1.1 x 10 <sup>-8</sup>
1,2,3,4,7,8,9-HpCDF	0.016 x 10 <sup>-6</sup>	9.9 x 10 <sup>-10</sup>
OCDF	0.16 x 10 <sup>-6</sup>	9.9 x 10 <sup>-9</sup>
Aroclor 1016/1254	0.036 x 10 <sup>-6</sup>	2.2 x 10 <sup>-9</sup>

## 2.5 Dispersion Modelling Assumptions

2.5.1 The air quality assessment supporting the DCO application has relied upon the use of ADMS to estimate ground level concentrations of pollutants. The HHRA model has been designed to accept output files from the US EPA ISC or AERMOD dispersion models, reflecting its North American origins and its need to follow the US EPA risk assessment protocol. The use of ADMS is consistent with the air quality assessment undertaken for the EfW CHP Facility and the emissions data and model



set up are identical to that carried out for the air quality assessment presented in **Chapter 8 Air Quality (Volume 6.2)**. Therefore, to maintain consistency with the air quality assessment, it has been possible to use output from the ADMS model with IRAP using the following procedure:

- generation of ISC input files and output files for the study area;
- generation of ADMS output data using the approach outlined in the US EPA risk assessment protocol; and
- inserting the ADMS results into the ISC output files.

2.5.2 For the modelling, all emission properties, building heights, and other relevant factors were retained from the air quality assessment provided for the EfW CHP Facility. As the health risk assessment requires information on the deposition of substances to surfaces as well as airborne concentrations of substances, the ADMS dispersion model has also been used to predict the following:

- the airborne concentration of vapour, particle and particle bound substances emitted;
- the wet deposition rate of particle and particle bound substances; and
- the dry deposition rate of vapour, particle and particle bound substances.

2.5.3 For dry deposition of particles and particle bound contaminants a fixed deposition velocity of  $0.01\text{m s}^{-1}$  has been used. The facility will be equipped with filters for particle removal and the emitted particles are likely to be less than  $1\text{-}2\ \mu\text{m}$  in diameter. For particles of this size, deposition velocities are likely to be of the order of  $0.001$  to  $0.01\text{m s}^{-1}$ . Therefore, as a worst-case, for the ADMS modelling a value of  $0.01\text{m s}^{-1}$  has been adopted. A gas dry deposition velocity of  $0.005\text{m s}^{-1}$  is used for the gas phase. For wet deposition, the following washout coefficients are used:

- Gas phase – washout coefficient A at 0.00016 and washout coefficient B of 0.64;
- Particle phase – washout coefficient A at 0.00028 and washout coefficient B of 0.64; and
- Particle bound phase – washout coefficient A at 0.00010 and washout coefficient B of 0.64.

## 2.6 Dispersion Modelling Results

2.6.1 A summary of the key results from the ADMS dispersion model is presented in **Table 2.3 Maximum Annual Average Particle Phase Concentrations and Particle Phase Deposition Rates Estimated by ADMS**. These have been predicted using the 2015 meteorological data set from the Met Office's Numerical Weather Prediction (NWP) model interpolated for the specific location of the EfW CHP Facility Site. This year was selected, as out of the five years considered (2015 to 2019), it was the year that provided highest predicted annual mean concentrations and deposition rates.



**Table 2.3 Maximum Annual Average Particle Phase Concentrations and Particle Phase Deposition Rates Estimated by ADMS**

Pollutant	Max Annual Average Concentration <sup>(a)</sup>	Max Annual Average Deposition Rate <sup>(b)</sup>
PCDD/Fs	(fg m <sup>-3</sup> )	(ng m <sup>-2</sup> year <sup>-1</sup> )
2,3,7,8-TCDD	0.011	0.45
1,2,3,7,8-PeCDD	0.090	3.6
1,2,3,4,7,8-HxCDD	0.11	4.2
1,2,3,7,8,9-HxCDD	0.077	3.1
1,2,3,6,7,8-HxCDD	0.095	3.8
1,2,3,4,6,7,8-HpCDD	0.62	24.7
OCDD	1.5	58.2
2,3,7,8-TCDF	0.10	4.1
2,3,4,7,8-PeCDF	0.20	7.8
1,2,3,7,8-PeCDF	0.10	4.1
1,2,3,4,7,8-HxCDF	0.80	31.7
1,2,3,7,8,9-HxCDF	0.015	0.58
1,2,3,6,7,8-HxCDF	0.30	11.8
2,3,4,6,7,8-HxCDF	0.32	12.7
1,2,3,4,6,7,8-HpCDF	1.6	64.0
1,2,3,4,7,8,9-HpCDF	0.15	5.8
OCDF	1.5	58.2
Aroclor 1016/1254	0.33	13.1
(a) Where 1 fg m <sup>-3</sup> is equal to 1 x 10 <sup>-15</sup> g m <sup>-3</sup>		
(b) Where 1 ng m <sup>-2</sup> year <sup>-1</sup> is equal to 1 x 10 <sup>-9</sup> g m <sup>-2</sup> year <sup>-1</sup>		



## 3. Input Parameters for the IRAP Model

### 3.1 Introduction

3.1.1 Exposure of an individual to a chemical may occur either by inhalation or ingestion (including food, water and soil). Of interest is the total dose of the chemical received by the individual through the combination of possible routes, and the IRAP model has been developed to estimate the dose received by the human body, often referred to as the external dose.

3.1.2 Exposure to COPCs is a function of the estimated concentration of the substance in the environmental media with which individuals may come into contact (i.e., exposure point concentrations) and the duration of contact. The concentration at the point of contact is itself a function of the transfer through air, soil, water, plants and animals that form part of the overall pathway. Exposure equations have been developed which combine exposure factors (e.g., exposure duration, frequency and medium intake rate) and exposure point concentrations. The dose equations therefore facilitate estimation of the received dose and account for the properties of the route of exposure, i.e., ingestion and inhalation.

3.1.3 For those substances that bio-accumulate, i.e., become more concentrated higher up the food chain, especially in body fats, the exposure to contaminated meat products and milk is of particular significance.

3.1.4 The IRAP model user has the facility to adjust some of the key exposure factors. An example is the diet of the Receptor and the proportion of which is local produce, which may be contaminated. Obviously, if a nearby resident eats no food grown locally, then that person's diet cannot be contaminated by the emissions from the source, in this case the EfW CHP Facility Site. It is conventional to investigate two types of Receptor, a farmer and a resident. It is assumed that a farmer eats proportionately more locally grown food than a resident. Where the potential exists for the consumption of locally caught fish a fisher Receptor may also be considered.

3.1.5 The Receptor types can also be divided into adults and children. Children are important Receptors because they tend to ingest soil and dusts directly and have lower body weights, so that the effect of the same dose is greater in the child than in the adult.

3.1.6 The IRAP model is designed to accept output files of airborne concentrations and deposition rates. From these, it proceeds to calculate the concentrations of the pollutants of concern in the environmental media, foodstuffs and the human Receptor. The dose experienced by the human Receptor can be compared to the tolerable daily intake (TDI) provided by the Committee on Toxicity for dioxins and dioxin like PCBs of  $2\text{pg kg}^{-1} \text{d}^{-1}$ .

3.1.7 The model requires a wide range of input parameters to be defined, these include:

- physical and chemical properties of the COPCs;
- EfW CHP Facility Site information, including site specific data; and



- Receptor information – for each Receptor type (e.g., adult or child, resident or farmer or fisher).

3.1.8 The HHRAP default values, which are incorporated into the IRAP model, have been used for the majority of these input values. These data are provided in the following sections.

## 3.2 Input Parameters for the COPCs

3.2.1 The IRAP model contains a database of physical and chemical parameters for each of the 206 COPCs. This database is based on default values provided by the HHRAP and all default values have been used for this assessment.

3.2.2 These parameters are used to determine how each of the COPCs behave in the environment and their presence and accumulation in various food products (meat, fish, animal products, vegetation, soil and water). For 2,3,7,8-TCDD (the most toxic of the PCDD/Fs), the default parameters are provided in **Table 3.1 IRAP Input Parameters for 2, 3, 7, 8-TCDD**.

**Table 3.1 IRAP Input Parameters for 2, 3, 7, 8-TCDD**

Parameter Description	Symbol	Units	2,3,7,8-TCDD
Chemical abstract service number	CAS No.	-	1746-01-6
Molecular weight	MW	g mole <sup>-1</sup>	322.0
Melting point of chemical	T_m	K	578.7
Vapour pressure	V_p	atm	1.97 x 10 <sup>-12</sup>
Aqueous solubility	S	mg L <sup>-1</sup>	1.93 x 10 <sup>-5</sup>
Henry's Law constant	H	atm-m <sup>3</sup> mol <sup>-1</sup>	3.29 x 10 <sup>-5</sup>
Diffusivity of COPC in air	D_a	cm <sup>2</sup> s <sup>-1</sup>	0.104
Diffusivity of COPC in water	D_w	cm <sup>2</sup> s <sup>-1</sup>	5.6 x 10 <sup>-6</sup>
Octanol-water partition coefficient	K_ow	-	6,309,573
Organic carbon-water partition coefficient	K_oc	mL g <sup>-1</sup>	3,890,451
Soil-water partition coefficient	Kd_s	mL g <sup>-1</sup>	38,904
Suspended sediments/surface water partition coefficient	Kd_sw	L kg <sup>-1</sup>	291,784
Bed sediment/sediment pore water partition coefficient	Kd_bs	mL g <sup>-1</sup>	155,618



Parameter Description	Symbol	Units	2,3,7,8-TCDD
COPC loss constant due to biotic and abiotic degradation	K_sg	a <sup>-1</sup>	0.03
Fraction of COPC air concentration in vapour phase	f_v		0.664
Root concentration factor	RCF	mL g <sup>-1</sup>	39,999
Plant-soil bioconcentration factor for below ground produce	br_root_veg	-	1.03
Plant-soil bioconcentration factor for leafy vegetables	br_leafy_veg	-	0.00455
Plant-soil bioconcentration factor for forage	br_forage	-	0.00455
COPC air-to-plant biotransfer factor for leafy vegetables	bv_leafy_veg	-	65,500
COPC air-to-plant biotransfer factor for forage	bv_forage	-	65,500
COPC biotransfer factor for milk	ba_milk	day kg <sup>-1</sup>	0.0055
COPC biotransfer factor for beef	ba_beef	day kg <sup>-1</sup>	0.026
COPC biotransfer factor for pork	ba_pork	day kg <sup>-1</sup>	0.032
Bioconcentration factor for COPC in eggs	Bcf_egg	-	0.060
Bioconcentration factor for COPC in chicken	Bcf_chicken	-	3.32
Fish bioconcentration factor	BCF_fish	L kg <sup>-1</sup>	34,400
Fish bioaccumulation factor	BAF_fish	L kg <sup>-1</sup>	0
Biota-sediment accumulation factor	BSAF_fish	-	0.09
Plant-soil bioconcentration factor for grain	br_grain	-	0.00455



Parameter Description	Symbol	Units	2,3,7,8-TCDD
Plant-soil bioconcentration factor for eggs	br_egg	-	0.011
COPC biotransfer factor for chicken	ba_chicken	day kg <sup>-1</sup>	0.019

### 3.3 EfW CHP Facility Site and Site-Specific Parameters

3.3.1 The IRAP health risk assessment model requires information relating to the location and its surroundings. The parameters required include the following:

- The fraction of animal feed (grain, silage and forage) grown on contaminated soils and quantity of animal feed and soil consumed by the various animal species considered.
- The interception fraction for above ground vegetation, forage and silage and length of vegetation exposure to deposition. The yield/standing crop biomass is also required.
- Input data for assessing the risks associated with exposure to breast milk, including:
  - ▶ body weight of infant;
  - ▶ exposure duration;
  - ▶ proportion of ingested COPC stored in fat;
  - ▶ proportion of mother’s weight that is fat;
  - ▶ fraction of fat in breast milk;
  - ▶ fraction of ingested contaminant that is absorbed; and
  - ▶ half-life of dioxins in adults and ingestion rate of breast milk.
- Other physical parameters (e.g., soil dry bulk density, density of air, soil mixing zone depth).

3.3.2 For all of these parameters the IRAP/EPA HHRAP default values have been used and these are presented in **Annex A**. Other site specific parameters are also required which are not provided by the IRAP model. These parameters were specified for the proposed facility as follows:

- Annual average evapotranspiration rate of 51.1cm a<sup>-1</sup> (assumed to be 70% of total precipitation);
- Annual average precipitation of 73.0cm a<sup>-1</sup> (based on the average for the five-year data set for the 2015 to 2019 meteorological data);
- Annual average irrigation of 0cm a<sup>-1</sup> since manual irrigation of crops in the UK is not generally required due to natural irrigation;
- Annual average runoff of 7.3cm a<sup>-1</sup> (assumed to be 10% of total precipitation);



- An annual average wind velocity of  $4.2\text{m s}^{-1}$  (average for the five years); and
- A time period over which deposition occurs of 30-years (the HHRAP default value).

### 3.4 Receptor Information

3.4.1 Within the IRAP model there are three Receptor types; Resident, Farmer and Fisher. Information relating to each Receptor type (adult and/or child) is required by the model where these Receptor types are used. The information required includes the following:

- Food (meat, dairy products, fish and vegetables), water and soil consumption rates for each Receptor type. However, only Fishers are assumed to consume fish and only Farmers are assumed to consume locally reared animals and animal products.
- Fraction of contaminated food, water and soil which is consumed by each Receptor type.
- Input data for the inhalation exposure including: inhalation exposure duration, inhalation exposure frequency, inhalation exposure time; and inhalation rate.
- Input data for the ingestion exposure including: exposure duration, exposure frequency, exposure time; and body weight of Receptor.

3.4.2 For the purposes of this assessment the default IRAP/HHRAP parameters have been used mainly to define the characteristics of the Receptors. The default input data are presented in *Annex B*. The only variation to this is the assumed body weight of a child Receptor. The IRAP/HHRAP default value is 15kg whereas in the UK a value of 20kg is typically used. Therefore, a value of 20kg has been applied.





## 4. Exposure Assessment

### 4.1 Selection of Receptors

- 4.1.1 In addition to defining specific locations for assessment, IRAP can be used to determine the location of the maximum impact over an area based on the results of the dispersion model. For each defined land-use area, IRAP selects the locations which represent the maximum predicted concentrations or deposition rates for the area selected. The locations of these various maxima are often co-located resulting in the selection of one to nine Receptor locations per defined area. This approach is adopted by IRAP since the maximum Receptor impact may occur at any one of the maximum concentration or deposition locations identified.
- 4.1.2 The nearest residential areas comprise the urban area of Wisbech and outlying villages (e.g., Elm, Emneth, Friday Bridge, Wisbech St Mary, Begdale and Leverington). Therefore, twelve areas where residential exposure may occur have been defined. In addition, the maximum predicted impact for a residential Receptor anywhere within the model domain has also been considered.
- 4.1.3 The EfW CHP Facility Site is surrounded by agricultural land to the south and has a land use that is dominated by farming activities, fruit crops as well as occasional isolated residential properties. Four areas where the potential for farming exists have been defined. These include areas to the south-east (SE), south-west (SW), north-east (NE) and north-west (NW).
- 4.1.4 For each type of Receptor up to nine locations are selected based on the maximum predicted airborne concentration, maximum predicted wet deposition rate and maximum dry deposition rate for the gas phase, particle phase and particle bound phase. For the assessment, nine farmer Receptors and twenty-seven Residential Receptors have been assessed. It is considered that the likelihood of locally caught fish being consumed is low and fisherman Receptors have not been included in the assessment. For all of the Receptor types, adult and child Receptors have been considered. The locations of the Resident and Farmer Receptors are described in **Table 4.1 Description of Resident and Farmer Receptors** and presented in **Graphic 4.1 Location of the Resident and Farmer Receptors**.
- 4.1.5 It should be noted that Max 1 and Max 2 are theoretical Receptors and represent the maximum Receptor locations anywhere within the model domain irrespective of land use. Max 2 occurs within the EfW CHP Facility Site and Max 1 within the industrial area to the north-east of the site location. These locations are not characteristic of population exposure and represent worst-case locations. At other locations not specifically considered in the assessment, the predicted hazards and risks will be lower than predicted for the discrete Receptors considered.



Graphic 4.1 Location of the Resident and Farmer Receptors

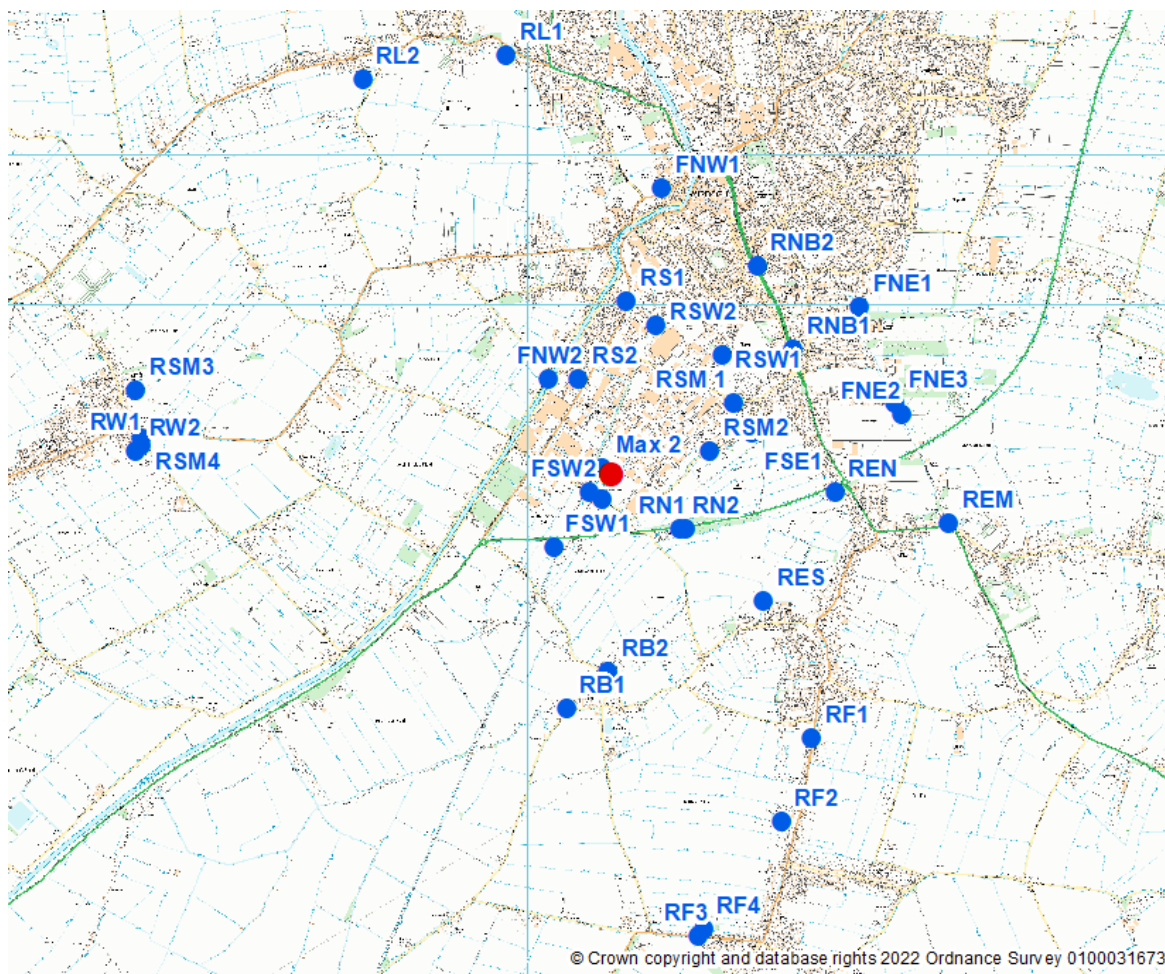


Table 4.1 Description of Resident and Farmer Receptors

Ref.	Name	Type	Easting	Northing
Max 1	Resident Maximum 1	Resident	545980	308500
Max 2	Resident Maximum 2	Resident	545500	307900
FNE1	Farmer North-east 1	Farmer	547220	308980
FNE2	Farmer North-east 2	Farmer	547500	308260
FNE3	Farmer North-east 3	Farmer	547460	308340
FNW1	Farmer North-west 1	Farmer	545900	309780
FNW2	Farmer North-west 2	Farmer	545140	308500
FSE1	Farmer South-east 1	Farmer	546500	308140
FSE2	Farmer South-east 2	Farmer	545500	307700



Ref.	Name	Type	Easting	Northing
<b>FSW1</b>	Farmer South-west 1	Farmer	545180	307380
<b>FSW2</b>	Farmer South-west 2	Farmer	545420	307740
<b>RB1</b>	Resident Begdale 1	Resident	545260	306300
<b>RB2</b>	Resident Begdale 2	Resident	545540	306540
<b>REN</b>	Resident Elm North	Resident	547060	307740
<b>RES</b>	Resident Elm South	Resident	546580	307020
<b>REM</b>	Resident Emneth	Resident	547820	307540
<b>RF1</b>	Resident Friday Bridge 1	Resident	546900	306100
<b>RF2</b>	Resident Friday Bridge 2	Resident	546700	305540
<b>RF3</b>	Resident Friday Bridge 3	Resident	546140	304780
<b>RF4</b>	Resident Friday Bridge 4	Resident	546180	304820
<b>RL1</b>	Resident Leverington 1	Resident	544860	310660
<b>RL2</b>	Resident Leverington 2	Resident	543900	310500
<b>RNB1</b>	Resident New Bridge 1	Resident	546060	307500
<b>RNB2</b>	Resident New Bridge 2	Resident	546020	307500
<b>RN1</b>	Resident Wisbech North 1	Resident	546300	308660
<b>RN2</b>	Resident Wisbech North 2	Resident	545860	308860
<b>RSW1</b>	Resident Wisbech South-west 1	Resident	545660	309020
<b>RSW2</b>	Resident Wisbech South-west 2	Resident	545340	308500
<b>RS1</b>	Resident Wisbech South 1	Resident	546380	308340
<b>RS2</b>	Resident Wisbech South 2	Resident	546220	308020
<b>RSM 1</b>	Resident Wisbech St Mary 1	Resident	542380	308420
<b>RSM2</b>	Resident Wisbech St Mary 2	Resident	542420	308100
<b>RSM3</b>	Resident Wisbech St Mary 3	Resident	542420	308060



Ref.	Name	Type	Easting	Northing
RSM4	Resident Wisbech St Mary 4	Resident	542380	308020
RW1	Resident Wisbech West 1	Resident	546780	308700
RW2	Resident Wisbech West 2	Resident	546540	309260

## 4.2 Assessment of Intake

### Ingestion Dose

4.2.1 The ingestion intake is calculated as the Average Daily Dose (ADD) from all ingestion exposure routes (e.g., soil, above ground vegetables, meat and dairy products) where for example:

$$ADD_{Ing, TCDD} = \frac{I_{Ing, TCDD} \bullet ED \bullet EF}{AT \bullet 365}$$

4.2.2 Where:  $ADD_{Ing, TCDD}$  = total ingestion dose for TCDD; ED is the exposure duration (dependent on the Receptor type); EF is the exposure frequency (350-days per year); and AT is the averaging time, and for determining the TDI, is assumed to be equal to the ED. The total dose is the sum of the dose for each of the individual congeners.

### Inhalation Dose

4.2.3 For inhalation, the ADD from inhalation exposure is calculated as follows:

$$ADD_{Inh, TCDD} = \frac{C_a \bullet IR \bullet ED \bullet EF}{AT \bullet 365}$$

4.2.4 Where:  $ADD_{Inh, TCDD}$  is the total inhalation dose for TCDD,  $C_a$  is the concentration of TCDD in air and IR is the daily inhalation rate. The total dose is the sum of the dose for each of the individual congeners.

## 4.3 Exposure to Dioxins and Furans

### Comparison of Dioxin/Furan Exposure with WHO and UK COT Guidance

#### Facility Contribution to Intake

4.3.1 The World Health Organization (WHO) recommends a tolerable daily intake for dioxins/furans of 1 to 4pg I-TEQ kg-BW<sup>-1</sup> d<sup>-1</sup> (picogrammes as the International



Toxic Equivalent per kilogram bodyweight per day)<sup>(3)</sup>. The TDI represents the tolerable daily intake for lifetime exposure and short-term excursions above the TDI would have no consequence provided that the average intake over long periods is not exceeded. The average (lifetime) daily intake of dioxins/furans for the Receptors considered is presented in **Table 4.2 Comparison of Average Daily Intakes with the UK COT and Who’s TDI for Dioxins/Furans (pg I-TEQ kg-BW<sup>-1</sup> d<sup>-1</sup>)**. These are also compared to the Committee on Toxicity (COT) TDI for dioxins and dioxin-like PCBs of 2pg I-TEQ kg-BW<sup>-1</sup> d<sup>-1</sup>.

**Table 4.2 Comparison of Average Daily Intakes with the UK COT and Who’s TDI for Dioxins/Furans (pg I-TEQ kg-BW<sup>-1</sup> d<sup>-1</sup>)**

Receptor Name	Adult	Child
Resident Maximum 1	0.0014	0.0039
Resident Maximum 2	0.044	0.13
Farmer North-east 1	0.012	0.017
Farmer North-east 2	0.0075	0.011
Farmer North-east 3	0.0079	0.011
Farmer North-west 1	0.0076	0.011
Farmer North-west 2	0.012	0.017
Farmer South-east 1	0.015	0.022
Farmer South-east 2	0.022	0.033
Farmer South-west 1	0.016	0.023
Farmer South-west 2	0.028	0.041
Resident Begdale 1	0.00024	0.00070
Resident Begdale 2	0.00026	0.00074
Resident Elm North	0.00046	0.0013
Resident Elm South	0.00034	0.00096
Resident Emneth	0.00029	0.00084
Resident Friday Bridge 1	0.00015	0.00042

3 Assessment of the Health Risk of Dioxins: Re-evaluation of the Tolerable Daily Intake (TD), WHO Consultation, May 25-291998, Geneva, Switzerland



Receptor Name	Adult	Child
Resident Friday Bridge 2	0.00014	0.00040
Resident Friday Bridge 3	0.00012	0.00034
Resident Friday Bridge 4	0.00012	0.00034
Resident Leverington 1	0.00018	0.00050
Resident Leverington 2	0.00016	0.00047
Resident New Bridge 1	0.00055	0.0016
Resident New Bridge 2	0.00057	0.0016
Resident Wisbech North 1	0.0010	0.0029
Resident Wisbech North 2	0.00088	0.0025
Resident Wisbech South-west 1	0.00048	0.0014
Resident Wisbech South-west 2	0.00064	0.0019
Resident Wisbech South 1	0.00090	0.0025
Resident Wisbech South 2	0.00077	0.0022
Resident Wisbech St Mary 1	0.000078	0.00022
Resident Wisbech St Mary 2	0.000090	0.00026
Resident Wisbech St Mary 3	0.000092	0.00026
Resident Wisbech St Mary 4	0.000092	0.00026
Resident Wisbech West 1	0.00066	0.0019
Resident Wisbech West 2	0.00069	0.0019
WHO TDI	1 to 4 pg I-TEQ kg-BW-1 d-1	
Committee on Toxicity (COT) TDI	2 pg I-TEQ kg-BW-1 d-1	

4.3.2 The maximum contribution of the facility to the COT TDI for farmer Receptors is 2.0% for the Farmer South-west 2 child Receptor and 1.4% for the Farmer South-west 2 adult Receptor. This assumes as a worst-case that these Receptors produce their own home reared and home-grown food at the location of maximum impact for



the area and represents an extreme worst-case. Furthermore, this assumes that both arable land and pastureland are available at this location. Therefore, it is considered that the predicted impacts for this Receptor and for other farmer Receptors represent an extreme worst-case.

4.3.3 For the residential Receptors, the maximum contribution of the facility to the COT TDI is 0.2% for Resident Wisbech North 1 Receptor. For the theoretical maximum predicted resident located anywhere within the model domain (Maximum 2 within the industrial area), the predicted impact represents 6.3% of the COT TDI for a child Receptor and 2.2% for an adult Receptor.

4.3.4 Therefore, taking into account the worst-case assumptions adopted for the assessment, the contribution of the facility to the intake of dioxins/furans and dioxin-like PCBs is negligible.

### Total Intake

4.3.5 The contribution of the facility to total intake is provided as follows:

- predicted incremental intake due to emissions from the EfW CHP Facility;
- average daily background intake (i.e., that arising from other sources), referred to as the mean daily intake (MDI);
- the total intake (i.e., the sum of the predicted incremental intake and the MDI); and
- a comparison of the total intake with the TDI for dioxin/furans.

4.3.6 For the key Receptors (i.e., those which represent the predicted highest exposure for the Receptor types considered) the results are presented in **Table 4.3 Comparison of Total Intake with the COT TDI**. Results are presented for both adult and child Receptors.

4.3.7 The MDI is derived from data provided by the Environment Agency <sup>4</sup> and a value of 49 pg WHO-TEQ d<sup>-1</sup>. The MDI for an adult Receptor and child Receptor is calculated as follows:

- for an adult Receptor a MDI of 0.7pg I-TEQ kg<sup>-1</sup> d<sup>-1</sup> <sup>5</sup> is derived by dividing the Environment Agency MDI by a bodyweight of 70 kg; and
- for a child Receptor a MDI of 1.8pg I-TEQ kg<sup>-1</sup> d<sup>-1</sup> is derived by dividing the Environment Agency MDI by a bodyweight of 20 kg and applying an adult to child correction factor of 0.74.

4.3.8 A comparison of predicted intakes with the MDI and TDI is presented in **Table 4.3 Comparison of Total Intake with the COT TDI**. Results are presented for Farmer South-west 2, Resident Wisbech North 1 and Maximum 2 Receptors where highest farmer and resident exposures are predicted.

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4 Soil Guideline Values for dioxins, furans and dioxin-like PCBs in soil, Environment Agency, Science Report SC050021/Dioxins SGV, September 2009

5 No correction is provided between the WHO-TEF and the I-TEF but a sensitivity analysis indicates that correcting between the two systems would have negligible impact on the results



**Table 4.3 Comparison of Total Intake with the COT TDI**

Receptor	Total Intake from the Facility (pg I-TEQ kg <sup>-1</sup> d <sup>-1</sup> )	Total Intake Facility + MDI (pg I-TEQ kg <sup>-1</sup> d <sup>-1</sup> )	Facility as %age of TDI	Total Intake as %age of TDI
Farmer South-west 2 Adult	0.028	0.73	1.4%	36.4%
Farmer South-west 2 Child	0.041	1.84	2.0%	92.0%
Resident Maximum 2 Adult	0.044	0.74	2.2%	37.2%
Resident Maximum 2 Child	0.13	1.93	6.5%	96.5%
Resident Wisbech North 1 Adult	0.0010	0.70	0.1%	35.1%
Resident Wisbech North 1 Child	0.0029	1.80	0.1%	90.1%
<b>COT TDI</b>	2	2	-	-

4.3.9 For inhalation and oral intake of PCDD/Fs for adults, total intake is well below the TDI. Background exposure represents approximately 35% of total exposure. At worst, the facility contributes 1.4% (2.2% for the maximum predicted) to the TDI for adults.

4.3.10 For inhalation and oral intake of PCDD/Fs for children, the background intake is relatively high at 90% of the TDI. At the residential areas identified, the additional contribution from the facility for a child is 0.041pg TEQ kg<sup>-1</sup> d<sup>-1</sup> (2.0% of the COT TDI). Combined with the background exposure for a 20kg child (1.8pg TEQ kg<sup>-1</sup> d<sup>-1</sup>) the total intake would be below the TDI (92.0%). For the maximum exposure predicted within the industrial area, the additional contribution is 0.13pg TEQ kg<sup>-1</sup> d<sup>-1</sup> (6.5% of the COT TDI) but is not characteristic of actual exposure. Furthermore, it should be noted that the TDI for PCDD/Fs is set for the purposes of assessing lifetime exposure and elevated background exposures for children are not representative of long-term exposure. Therefore, taking into account the extreme worst-case assumptions adopted for farmer Receptors and the maximum predicted, it is concluded that the contribution of the facility to total intake would be not significant.

### Infant Breast Milk Exposure to Dioxins and Furans

4.3.11 Another exposure pathway of interest is infant exposure to dioxins and furans via the ingestion of their mother’s breast milk. This is because the potential for contamination of breast milk is particularly high for dioxin-like compounds such as these, as they are extremely lipophilic (fat soluble) and hence likely to accumulate in breast milk. Further, the infant body weight is smaller and it could be argued that the effect is proportionately greater than in an adult.





- 4.3.12 This exposure is measured by the Average Daily Dose (ADD) on the basis of an averaging time of 1-year. In the US, a threshold value of  $50 \text{ pgkg}^{-1} \text{ d}^{-1}$  of 2,3,7,8-TCDD TEQ is cited as being potentially harmful. The IRAP model calculates the ADD that would result from an adult Receptor breast feeding an infant. It should be noted that the ADD from breast feeding calculated by IRAP does not consider dioxin-like PCBs. However, the dioxin-like PCB emission is a small fraction of the total emission and the inclusion of dioxin-like PCBs would not result in a significant increase in the ADD from breast feeding.
- 4.3.13 A summary of the ADD for each of the infants of adult Receptors considered for the assessment is presented in **Table 4.4 Assessment of the Average Daily Dose for a Breast-fed Infant of an Adult Receptor**.

**Table 4.4 Assessment of the Average Daily Dose for a Breast-fed Infant of an Adult Receptor**

Receptor Name	Average Daily Dose from Breast Feeding ( $\text{pg kg}^{-1} \text{ d}^{-1}$ of 2,3,7,8-TCDD)
Resident Maximum 1	0.012
Resident Maximum 2	0.37
Farmer Northeast 1	0.13
Farmer Northeast 2	0.083
Farmer Northeast 3	0.087
Farmer North-west 1	0.084
Farmer North-west 2	0.12
Farmer South-east 1	0.17
Farmer South-east 2	0.22
Farmer South-west 1	0.17
Farmer South-west 2	0.27
Resident Begdale 1	0.0021
Resident Begdale 2	0.0022
Resident Elm North	0.0040
Resident Elm South	0.0029
Resident Emneth	0.0026



Receptor Name	Average Daily Dose from Breast Feeding (pg kg-1 d-1 of 2,3,7,8-TCDD)
Resident Friday Bridge 1	0.0013
Resident Friday Bridge 2	0.0012
Resident Friday Bridge 3	0.0010
Resident Friday Bridge 4	0.0010
Resident Leverington 1	0.0015
Resident Leverington 2	0.0014
Resident New Bridge 1	0.0047
Resident New Bridge 2	0.0049
Resident Wisbech North 1	0.0092
Resident Wisbech North 2	0.0077
Resident Wisbech South-west 1	0.0042
Resident Wisbech South-west 2	0.0054
Resident Wisbech South 1	0.0080
Resident Wisbech South 2	0.0067
Resident Wisbech St Mary 1	0.00068
Resident Wisbech St Mary 2	0.00079
Resident Wisbech St Mary 3	0.00080
Resident Wisbech St Mary 4	0.00080
Resident Wisbech West 1	0.0058
Resident Wisbech West 2	0.0060
<b>US EPA Criterion</b>	<b>50</b>
<b>WHO criterion</b>	<b>1 to 4</b>
<b>UK criterion (COT)</b>	<b>2</b>



- 4.3.14 Other than the maximum predicted within the model domain, the highest ADDs are calculated for the infants of farmer Receptors and represent at worst less than 0.5% of the US EPA criterion of  $50\text{pg kg}^{-1} \text{d}^{-1}$  of 2,3,7,8-TCDD. The calculated ADDs for residential Receptors are lower compared to the farmer since the most significant exposure to dioxins/furans is via the food chain, particularly animals and animal products. The farmer Receptors are assumed to consume contaminated meat and dairy products. However, residential Receptors are only assumed to consume vegetable products which are less significant with regard to exposure to dioxins/furans.
- 4.3.15 As a worst-case, the ADD for the highest exposure for the infants of farmers (Farmer South-west 2) is 14% of the COT TDI. For these Receptors it is assumed, as a worst-case, that all of the food consumed by their mother is reared and grown locally at the location of maximum impact in their area. However, this represents an extreme worst-case. Furthermore, the duration of exposure is short and the average daily intake over the lifetime of the individual would be substantially less.
- 4.3.16 Taking into account the extreme worst-case basis for the assessment, it is concluded that infant exposure to breast milk would be not significant. Furthermore, the WHO recognises that breast-fed infants will be exposed to higher intakes for a short duration, but also that breast feeding itself provides associated benefits.



## 5. Summary and Conclusions

### 5.1 Summary

- 5.1.1 The possible impacts on human health arising from dioxins and furans (PCDD/F) and dioxin-like PCBs emitted from the EfW CHP Facility to the south of Wisbech have been assessed under the worst-case scenario, namely that of an individual exposed for a lifetime to the effects of the highest airborne concentrations and consuming mostly locally grown food. This equates to a hypothetical farmer consuming food grown on the farm, situated at the closest proximity to the facility. Where there are no active farming areas in close proximity, a residential Receptor is considered where it is assumed that the resident consumes locally grown vegetables.
- 5.1.2 The assessment has identified and considered the most plausible pathways of exposure for the individuals considered (farmer and resident). Deposition and subsequent uptake of the compounds of potential concern (COPCs) into the food chain is likely to be the more numerically significant pathway over direct inhalation.
- 5.1.3 The maximum contribution of the EfW CHP Facility to the COT TDI is 2.0% for the farmer Receptors and 0.1% for the residential Receptors. For the farmer this assumes as a worst-case that these Receptors are located at the closest farming area to the EfW CHP Facility and all of their food is reared and grown at this location and represents an extreme worst-case. Therefore, taking into account the extreme worst-case assumptions, the impact of emissions on local sensitive Receptors is considered to be not significant.

### 5.2 Conclusions

- 5.2.1 The risk assessment methodology used in this assessment has been structured so as to create worst-case estimates of risk. A number of features in the methodology give rise to this degree of conservatism. It has been demonstrated that for the maximally exposed individual, exposure to dioxins, furans and dioxin-like PCBs is not significant.



# Annex A

## Site Parameters

## Annex A: Site Parameters Defined for the Health Risk Assessment

Parameter	Parameter Value	IRAP Symbol	Units
Soil dry bulk density	1.5	bd	g cm <sup>-3</sup>
Forage fraction grown on contam. soil eaten by CATTLE	1.0	beef_fi_forage	--
Grain fraction grown on contam. soil eaten by CATTLE	1.0	beef_fi_grain	--
Silage fraction grown on contam. eaten by CATTLE	1.0	beef_fi_silage	--
Qty of forage eaten by CATTLE each day	8.8	beef_qp_forage	kg DW d <sup>-1</sup>
Qty of grain eaten by CATTLE each day	0.47	beef_qp_grain	kg DW d <sup>-1</sup>
Qty of silage eaten by CATTLE each day	2.5	beef_qp_silage	kg DW d <sup>-1</sup>
Grain fraction grown on contam. soil eaten by CHICKEN	1.0	chick_fi_grain	--
Qty of grain eaten by CHICKEN each day	0.2	chick_qp_grain	kg DW d <sup>-1</sup>
Fish lipid content	0.07	f_lipid	--
Fraction of CHICKEN's diet that is soil	0.1	fd_chicken	--
Universal gas constant	8.205e-5	gas_r	atm-m <sup>3</sup> mol <sup>-1</sup> K <sup>-1</sup>
Plant surface loss coefficient	18	kp	a <sup>-1</sup>
Fraction of mercury emissions NOT lost to the global cycle	0.48	merc_q_corr	--
Fraction of mercury speciated into methyl mercury in produce	0.22	mercmethyl_ag	--
Fraction of mercury speciated into methyl mercury in soil	0.02	mercmethyl_sc	--
Forage fraction grown contam. soil, eaten by MILK CATTLE	1.0	milk_fi_forage	--
Grain fraction grown contam. soil, eaten by MILK CATTLE	1.0	milk_fi_grain	--
Silage fraction grown contam. soil, eaten by MILK CATTLE	1.0	milk_fi_silage	--
Qty of forage eaten by MILK CATTLE each day	13.2	milk_qp_forage	kg DW d <sup>-1</sup>
Qty of grain eaten by MILK CATTLE each day	3.0	milk_qp_grain	kg DW d <sup>-1</sup>
Qty of silage eaten by MILK CATTLE each day	4.1	milk_qp_silage	kg DW d <sup>-1</sup>
Averaging time	1	milkfat_at	a
Body weight of infant	9.4	milfat_bw_infant	kg
Exposure duration of infant to breast milk	1	milkfat_ed	a
Proportion of ingested dioxin that is stored in fat	0.9	milkfat_f1	--
Proportion of mothers weight that is fat	0.3	milkfat_f2	--
Fraction of fat in breast milk	0.04	milkfat_f3	--
Fraction of ingested contaminant that is absorbed	0.9	milkfat_f4	--
Half-life of dioxin in adults	2555	milkfat_h	d
Ingestion rate of breast milk	0.688	milkfat_ir_milk	kg d <sup>-1</sup>
Viscosity of air corresponding to air temp.	1.81e-04	mu_a	g cm <sup>-1</sup> s <sup>-1</sup>
Fraction of grain grown on contam. soil eaten by PIGS	1.0	pork_fi_grain	--
Fraction of silage grown on contam. soil and eaten by PIGS	1.0	pork_fi_silage	--
Qty of grain eaten by PIGS each day	3.3	pork_qp_grain	kg DW d <sup>-1</sup>
Qty of silage eaten by PIGS each day	1.4	pork_qp_silage	kg DW d <sup>-1</sup>
Qty of soil eaten by CATTLE	0.5	qs_beef	kg d <sup>-1</sup>
Qty of soil eaten by CHICKEN	0.022	qs_chick	kg d <sup>-1</sup>
Qty of soil eaten by DAIRY CATTLE	0.4	qs_milk	kg d <sup>-1</sup>
Qty of soil eaten by PIGS	0.37	qs_pork	kg d <sup>-1</sup>
Density of air	1.2e-3	rho_a	g cm <sup>-3</sup>
Solids particle density	2.7	rho_s	g cm <sup>-3</sup>
Interception fraction - edible portion ABOVEGROUND	0.39	rp	--
Interception fraction - edible portion FORAGE	0.5	rp_forage	--
Interception fraction - edible portion SILAGE	0.46	rp_silage	--
Ambient air temperature	298	t	K
Temperature correction factor	1.026	theta	--
Soil volumetric water content	0.2	theta_s	mL cm <sup>-3</sup>
Length of plant expos. to depos. - ABOVEGROUND	0.16	tp	a
Length of plant expos. to depos. - FORAGE	0.12	tp_forage	a
Length of plant expos. to depos. - SILAGE	0.16	tp_silage	a
Average annual wind speed	3.9	u	m s <sup>-1</sup>
Dry deposition velocity	0.5	vdv	cm s <sup>-1</sup>
Dry deposition velocity for mercury	2.9	vdv_hg	cm s <sup>-1</sup>
Wind velocity	3.9	w	m s <sup>-1</sup>
Yield/standing crop biomass - edible portion ABOVEGROUND	2.24	yp	kg DW m <sup>-2</sup>
Yield/standing crop biomass - edible portion FORAGE	0.24	yp_forage	kg DW m <sup>-2</sup>
Yield/standing crop biomass - edible portion SILAGE	0.8	yp_silage	kg DW m <sup>-2</sup>
Soil mixing zone depth	2.0	z	cm



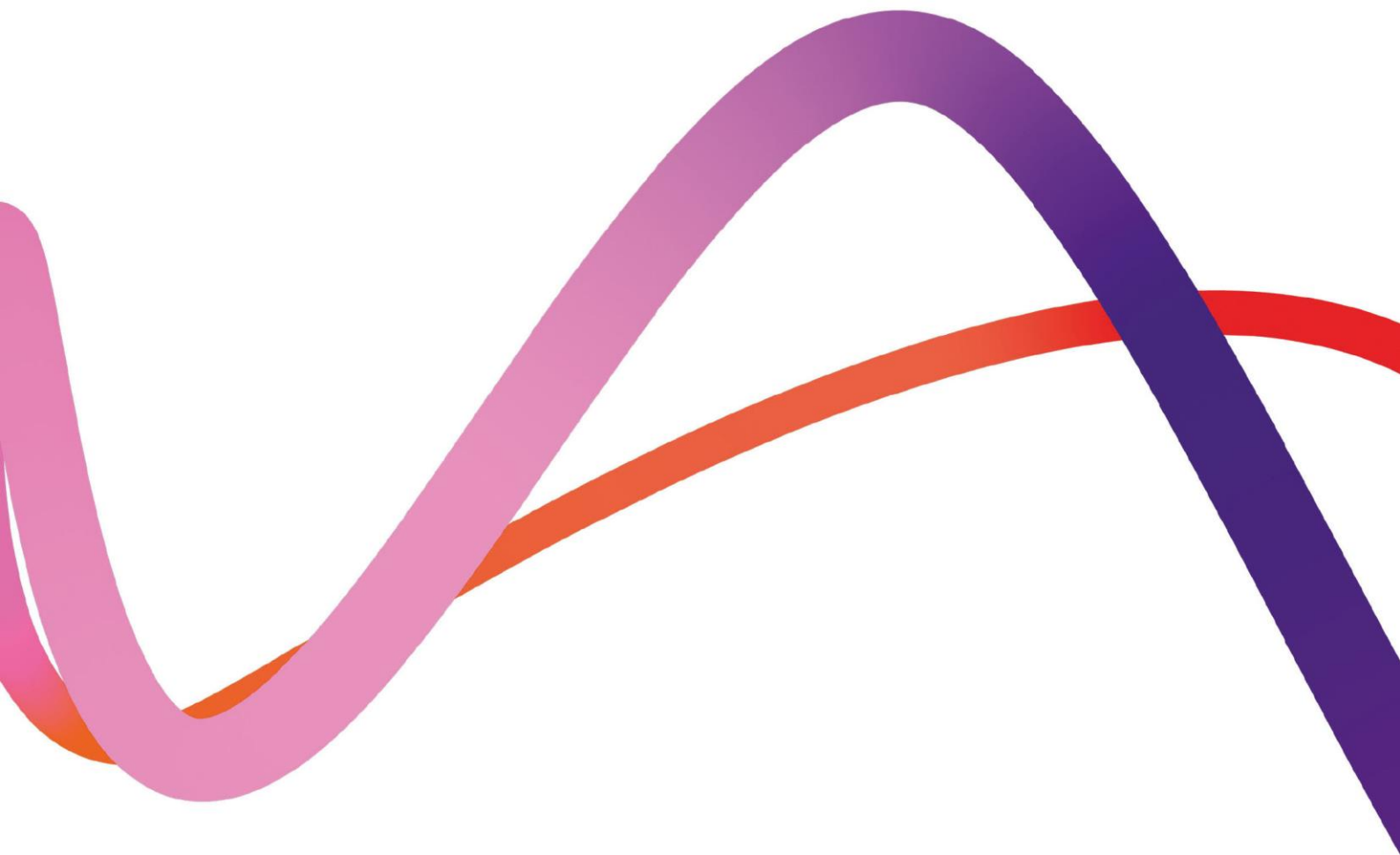
# Annex B

## Scenario Parameters

## Annex B: Exposure Scenario Parameters

Parameter Description	Adult Resident	Child Resident	Adult Farmer	Child Farmer	Adult Fisher	Child Fisher	Units
Averaging time for carcinogens	70	70	70	70	70	70	a
Averaging time for noncarcinogens	30	6	40	6	30	6	a
Consumption rate of BEEF	0.0	0.0	0.00122	0.00075	0.0	0.0	kg kg <sup>-1</sup> FW d <sup>-1</sup>
Body weight	70	15	70	15	70	15	kg
Consumption rate of POULTRY	0.0	0.0	0.00066	0.00045	0.0	0.0	kg kg <sup>-1</sup> FW d <sup>-1</sup>
Consumption rate of ABOVEGROUND PRODUCE	0.00032	0.00077	0.00047	0.00113	0.00032	0.00077	kg kg <sup>-1</sup> DW d <sup>-1</sup>
Consumption rate of BELOWGROUND PRODUCE	0.00014	0.00023	0.00017	0.00028	0.00014	0.00023	kg kg <sup>-1</sup> DW d <sup>-1</sup>
Consumption rate of DRINKING WATER	1.4	0.67	1.4	0.67	1.4	0.67	L d <sup>-1</sup>
Consumption rate of PROTECTED ABOVEGROUND PRODUCE	0.00061	0.0015	0.00064	0.00157	0.00061	0.0015	kg kg <sup>-1</sup> DW d <sup>-1</sup>
Consumption rate of SOIL	0.0001	0.0002	0.0001	0.0002	0.0001	0.0002	kg d <sup>-1</sup>
Exposure duration	30	6	40	6	30	6	yr
Exposure frequency	350	350	350	350	350	350	d a <sup>-1</sup>
Consumption rate of EGGS	0.0	0.0	0.00075	0.00054	0.0	0.0	kg kg <sup>-1</sup> FW d <sup>-1</sup>
Fraction of contaminated ABOVEGROUND PRODUCE	1.0	1.0	1.0	1.0	1.0	1.0	--
Fraction of contaminated DRINKING WATER	1.0	1.0	1.0	1.0	1.0	1.0	--
Fraction contaminated SOIL	1.0	1.0	1.0	1.0	1.0	1.0	--
Consumption rate of FISH	0.0	0.0	0.0	0.0	0.00125	0.00088	kg kg <sup>-1</sup> FW d <sup>-1</sup>
Fraction of contaminated FISH	1.0	1.0	1.0	1.0	1.0	1.0	--
Inhalation exposure duration	30	6	40	6	30	6	a
Inhalation exposure frequency	350	350	350	350	350	350	d a <sup>-1</sup>
Inhalation exposure time	24	24	24	24	24	24	h d <sup>-1</sup>
Fraction of contaminated BEEF	1	1	1	1	1	1	--
Fraction of contaminated POULTRY	1	1	1	1	1	1	--
Fraction of contaminated EGGS	1	1	1	1	1	1	--
Fraction of contaminated MILK	1	1	1	1	1	1	--
Fraction of contaminated PORK	1	1	1	1	1	1	--
Inhalation rate	0.83	0.30	0.83	0.30	0.83	0.30	m <sup>3</sup> h <sup>-1</sup>
Consumption rate of MILK	0.0	0.0	0.01367	0.02268	0.0	0.0	kg kg <sup>-1</sup> FW d <sup>-1</sup>
Consumption rate of PORK	0.0	0.0	0.00055	0.00042	0.0	0.0	kg kg <sup>-1</sup> FW d <sup>-1</sup>
Time period at the beginning of combustion	0	0	0	0	0	0	a
Length of exposure duration	30	6	40	6	30	6	a







# Annex H

## Modelling Results

**Table 8B.H1 Construction Phase Road Traffic Modelling Results ( $\mu\text{g m}^{-3}$ )**

ID	NO <sub>2</sub> 2024 Baseline	NO <sub>2</sub> 2024 With Dev.	NO <sub>2</sub> Increase	PM <sub>10</sub> 2024 Baseline	PM <sub>10</sub> 2024 With Dev.	PM <sub>10</sub> Increase	PM <sub>2.5</sub> 2024 Baseline	PM <sub>2.5</sub> 2024 With Dev.	PM <sub>2.5</sub> Increase	IAQM impact
R1	8.1	8.2	0.02	14.4	14.4	0.00	8.9	8.9	0.00	Negligible
R2	10.0	10.1	0.11	15.8	15.8	0.01	9.4	9.4	0.00	Negligible
R3	11.2	11.2	0.01	16.1	16.1	0.00	9.6	9.6	0.00	Negligible
R4	13.9	13.9	0.02	16.8	16.8	0.01	10.0	10.0	0.01	Negligible
R5	12.0	12.0	0.02	16.3	16.3	0.01	9.7	9.7	0.00	Negligible
R6	12.1	12.2	0.09	16.1	16.2	0.03	9.7	9.7	0.02	Negligible
R7	12.6	12.7	0.10	15.9	16.0	0.01	9.6	9.6	0.01	Negligible
R8	12.9	13.0	0.02	15.6	15.6	0.01	10.0	10.0	0.00	Negligible
R9	17.9	18.1	0.17	16.0	16.0	0.01	10.2	10.2	0.01	Negligible
R10	12.3	12.3	0.02	15.4	15.4	0.00	9.9	9.9	0.00	Negligible
R11	14.9	14.9	0.03	16.0	16.0	0.01	10.2	10.2	0.00	Negligible
R12	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R13	11.9	12.0	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R14	7.9	7.9	0.01	14.3	14.3	0.00	8.8	8.8	0.00	Negligible
R15	9.3	9.3	0.02	15.5	15.5	0.00	9.3	9.3	0.00	Negligible
R16	9.2	9.2	0.01	16.5	16.5	0.00	9.6	9.6	0.00	Negligible
R17	14.4	14.4	0.02	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R18	15.0	15.1	0.02	15.5	15.5	0.00	9.8	9.8	0.00	Negligible
R19	21.5	21.5	0.09	16.3	16.3	0.02	10.3	10.4	0.01	Negligible
R20	18.3	18.4	0.08	16.3	16.3	0.02	10.3	10.3	0.01	Negligible
R21	17.3	17.4	0.05	16.0	16.0	0.01	10.2	10.2	0.01	Negligible
R22	15.5	15.5	0.03	15.6	15.6	0.00	9.9	9.9	0.00	Negligible
R23	19.2	19.2	0.08	16.4	16.4	0.02	10.4	10.4	0.01	Negligible
R24	19.9	20.0	0.08	16.4	16.5	0.02	10.4	10.4	0.01	Negligible
R26	20.7	20.8	0.06	16.1	16.2	0.01	10.3	10.3	0.01	Negligible
R27	19.3	19.3	0.06	16.1	16.1	0.01	10.2	10.2	0.01	Negligible
R28	14.5	14.5	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R29	14.6	14.6	0.02	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R30	20.4	20.4	0.09	17.0	17.0	0.01	10.2	10.2	0.01	Negligible
R31	19.9	20.1	0.12	16.7	16.7	0.01	10.0	10.0	0.00	Negligible
R32	18.4	18.4	0.08	16.7	16.7	0.01	10.1	10.1	0.00	Negligible
R33	14.9	14.9	0.04	17.0	17.0	0.01	10.2	10.2	0.00	Negligible
R34	10.2	10.2	0.01	16.6	16.6	0.00	9.7	9.7	0.00	Negligible
R35	18.7	18.7	0.03	16.4	16.5	0.01	10.4	10.4	0.00	Negligible
R36	19.1	19.1	0.03	16.5	16.5	0.01	10.5	10.5	0.00	Negligible
R37	22.0	22.0	0.04	16.3	16.3	0.01	10.3	10.3	0.00	Negligible
R38	25.8	25.8	0.04	16.3	16.3	0.01	10.3	10.3	0.00	Negligible
R39	22.4	22.4	0.04	16.0	16.0	0.01	10.2	10.2	0.00	Negligible
R40	17.0	17.0	0.03	15.8	15.8	0.00	10.0	10.0	0.00	Negligible
R41	30.0	30.1	0.06	16.6	16.6	0.01	10.6	10.6	0.01	Negligible
R42	18.4	18.5	0.02	16.2	16.2	0.01	10.3	10.3	0.00	Negligible
R43	17.6	17.6	0.02	16.2	16.2	0.01	10.2	10.3	0.00	Negligible
R44	15.4	15.4	0.02	15.6	15.6	0.00	9.9	9.9	0.00	Negligible
R45	14.1	14.1	0.01	15.6	15.6	0.00	10.1	10.1	0.00	Negligible
R46	13.4	13.4	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R47	26.8	26.8	0.04	16.3	16.3	0.01	10.6	10.6	0.00	Negligible

ID	NO <sub>2</sub> 2024 Baseline	NO <sub>2</sub> 2024 With Dev.	NO <sub>2</sub> Increase	PM <sub>10</sub> 2024 Baseline	PM <sub>10</sub> 2024 With	PM <sub>10</sub> Increase	PM <sub>2.5</sub> 2024 Baseline	PM <sub>2.5</sub> 2024 With Dev.	PM <sub>2.5</sub> Increase	IAQM impact
R48	17.1	17.1	0.01	15.6	15.6	0.00	10.2	10.2	0.00	Negligible
R49	20.4	20.4	0.02	15.9	15.9	0.00	10.4	10.4	0.00	Negligible
R50	16.6	16.6	0.03	16.1	16.1	0.00	10.5	10.5	0.00	Negligible
R51	17.6	17.7	0.03	16.4	16.4	0.01	10.6	10.6	0.00	Negligible
R52	17.0	17.0	0.03	16.1	16.1	0.01	10.5	10.5	0.00	Negligible
R53	20.7	20.8	0.07	17.2	17.2	0.02	11.1	11.1	0.01	Negligible
R54	17.7	17.8	0.06	16.1	16.1	0.01	10.2	10.2	0.01	Negligible
R55	13.9	13.9	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R56	13.9	13.9	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R57	14.4	14.4	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R58	14.3	14.3	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R59	12.4	12.5	0.02	15.5	15.5	0.00	9.9	9.9	0.00	Negligible
R60	11.1	11.1	0.01	14.5	14.5	0.00	9.2	9.2	0.00	Negligible
R61	13.0	13.1	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R62	13.3	13.3	0.00	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R63	13.1	13.1	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R64	13.3	13.3	0.00	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R65	16.6	16.6	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R66	13.7	13.7	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R67	7.9	7.9	0.00	14.8	14.8	0.00	9.0	9.0	0.00	Negligible
R68	7.6	7.6	0.01	15.1	15.1	0.00	9.0	9.0	0.00	Negligible
R69	9.3	9.3	0.01	15.5	15.5	0.00	9.3	9.3	0.00	Negligible
R70	6.9	6.9	0.00	14.9	14.9	0.00	8.9	8.9	0.00	Negligible
R71	7.0	7.0	0.00	14.6	14.6	0.00	8.8	8.8	0.00	Negligible
R72	9.7	9.7	0.00	15.5	15.5	0.00	9.4	9.4	0.00	Negligible
R73	9.8	9.8	0.01	15.5	15.5	0.00	9.4	9.4	0.00	Negligible
R74	10.0	10.0	0.01	14.7	14.7	0.00	9.4	9.5	0.00	Negligible
R75	10.7	10.7	0.00	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R76	13.8	13.8	0.01	16.3	16.4	0.00	9.8	9.8	0.00	Negligible
R77	9.7	9.7	0.01	15.6	15.6	0.00	9.4	9.4	0.00	Negligible
R78	9.8	9.8	0.01	15.8	15.8	0.00	9.4	9.4	0.00	Negligible
R79	23.8	24.1	0.26	16.2	16.2	0.03	10.3	10.3	0.02	Negligible
R80	13.3	13.3	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R81	13.1	13.1	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R82	15.3	15.3	0.02	15.6	15.6	0.00	9.9	9.9	0.00	Negligible
R83	10.1	10.1	0.06	15.9	15.9	0.04	9.5	9.5	0.02	Negligible
R84	17.8	18.1	0.31	15.8	15.8	0.04	10.0	10.1	0.02	Negligible
R85	23.1	23.6	0.51	16.2	16.2	0.04	10.3	10.3	0.02	Negligible
R86	15.0	15.1	0.13	15.5	15.6	0.03	9.9	9.9	0.02	Negligible
R87	13.5	13.5	0.00	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R88	14.8	14.8	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R89	14.0	14.0	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R90	16.5	16.5	0.02	15.6	15.6	0.00	10.2	10.2	0.00	Negligible
R91	15.1	15.1	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R92	10.1	10.1	0.00	14.6	14.6	0.00	9.5	9.5	0.00	Negligible
R93	10.0	10.0	0.00	14.6	14.6	0.00	9.5	9.5	0.00	Negligible
R94	13.6	13.6	0.03	15.7	15.7	0.00	10.0	10.0	0.00	Negligible
R95	16.0	16.0	0.05	15.7	15.7	0.01	9.9	9.9	0.01	Negligible

ID	NO <sub>2</sub> 2024 Baseline	NO <sub>2</sub> 2024 With Dev.	NO <sub>2</sub> Increase	PM <sub>10</sub> 2024 Baseline	PM <sub>10</sub> 2024 With	PM <sub>10</sub> Increase	PM <sub>2.5</sub> 2024 Baseline	PM <sub>2.5</sub> 2024 With Dev.	PM <sub>2.5</sub> Increase	IAQM impact
R96	16.6	16.7	0.16	15.7	15.7	0.02	10.0	10.0	0.01	Negligible
R97	13.4	13.4	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R98	13.5	13.5	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R99	15.3	15.3	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R100	10.0	10.1	0.01	14.6	14.6	0.00	9.5	9.5	0.00	Negligible
R101	10.1	10.1	0.00	14.6	14.6	0.00	9.5	9.5	0.00	Negligible
R102	10.7	10.7	0.00	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R103	9.7	9.7	0.01	15.5	15.5	0.00	9.4	9.4	0.00	Negligible
R104	8.8	8.8	0.00	15.8	15.8	0.00	9.5	9.5	0.00	Negligible
R105	11.3	11.3	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R106	11.5	11.6	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R107	14.7	14.8	0.09	15.5	15.5	0.02	9.8	9.9	0.01	Negligible
R108	12.4	12.4	0.04	15.5	15.5	0.01	9.9	9.9	0.00	Negligible
R109	13.5	13.5	0.00	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R110	13.2	13.2	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R111	14.2	14.2	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R112	11.5	11.5	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R113	14.3	14.3	0.01	15.5	15.6	0.00	10.1	10.1	0.00	Negligible
R114	14.5	14.5	0.01	15.6	15.6	0.00	10.2	10.2	0.00	Negligible
R115	12.9	12.9	0.01	15.3	15.3	0.00	9.9	9.9	0.00	Negligible
R116	10.9	10.9	0.05	16.0	16.0	0.02	9.6	9.6	0.01	Negligible
R117	11.8	11.8	0.01	14.7	14.7	0.00	9.3	9.3	0.00	Negligible
R118	11.9	11.9	0.01	14.7	14.7	0.00	9.3	9.3	0.00	Negligible
R119	15.7	15.7	0.02	15.7	15.7	0.00	10.2	10.2	0.00	Negligible
R120	11.9	11.9	0.01	14.7	14.7	0.00	9.3	9.3	0.00	Negligible
R121	14.9	14.9	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R122	15.2	15.2	0.02	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R123	14.9	14.9	0.02	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R124	14.6	14.6	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R125	14.4	14.4	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R126	14.3	14.3	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R127	14.3	14.3	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R128	14.2	14.2	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R129	13.7	13.7	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R130	13.7	13.7	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R131	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R132	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R133	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R134	13.9	13.9	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R135	13.9	13.9	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R136	13.7	13.7	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R137	13.7	13.7	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R138	13.7	13.7	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R139	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R140	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R141	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R142	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R143	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible

ID	NO <sub>2</sub> 2024 Baseline	NO <sub>2</sub> 2024 With Dev.	NO <sub>2</sub> Increase	PM <sub>10</sub> 2024 Baseline	PM <sub>10</sub> 2024 With	PM <sub>10</sub> Increase	PM <sub>2.5</sub> 2024 Baseline	PM <sub>2.5</sub> 2024 With Dev.	PM <sub>2.5</sub> Increase	IAQM impact
R144	13.8	13.9	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R145	14.6	14.6	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R146	14.7	14.7	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R147	14.8	14.9	0.02	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R148	14.9	15.0	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R149	15.4	15.4	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R150	15.5	15.5	0.02	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R151	15.7	15.7	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R152	15.8	15.9	0.02	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R153	15.5	15.5	0.02	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R154	15.0	15.0	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R155	14.8	14.8	0.02	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R156	14.7	14.7	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R157	14.6	14.6	0.01	15.4	15.5	0.00	10.1	10.1	0.00	Negligible
R158	14.7	14.7	0.01	15.4	15.5	0.00	10.1	10.1	0.00	Negligible
R159	14.7	14.8	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R160	20.7	20.7	0.02	15.9	15.9	0.00	10.4	10.4	0.00	Negligible
R161	20.4	20.4	0.02	15.9	15.9	0.00	10.3	10.3	0.00	Negligible
R162	18.9	19.0	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R163	19.0	19.0	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R164	20.0	20.1	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R165	18.9	19.0	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R166	18.8	18.8	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R167	20.0	20.0	0.03	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R168	18.7	18.7	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R169	18.3	18.3	0.02	15.7	15.7	0.00	10.3	10.3	0.00	Negligible
R170	19.9	19.9	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R171	19.0	19.0	0.03	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R172	19.5	19.5	0.03	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R173	19.5	19.6	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R174	19.5	19.5	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R175	19.5	19.6	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R176	19.2	19.2	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R177	19.1	19.2	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R178	19.0	19.1	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R179	21.6	21.6	0.03	15.9	15.9	0.00	10.4	10.4	0.00	Negligible
R180	21.1	21.1	0.02	15.9	15.9	0.00	10.4	10.4	0.00	Negligible
R181	21.3	21.3	0.03	15.9	15.9	0.00	10.4	10.4	0.00	Negligible
R182	20.8	20.9	0.02	15.9	15.9	0.00	10.4	10.4	0.00	Negligible
R183	20.6	20.7	0.03	15.9	15.9	0.00	10.4	10.4	0.00	Negligible
R184	20.5	20.6	0.03	15.9	15.9	0.00	10.4	10.4	0.00	Negligible
R185	20.5	20.5	0.02	15.9	15.9	0.00	10.3	10.4	0.00	Negligible
R186	20.1	20.1	0.03	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R187	20.0	20.0	0.03	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R188	19.6	19.7	0.03	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R189	19.7	19.7	0.03	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R190	19.6	19.6	0.02	15.8	15.8	0.00	10.3	10.3	0.00	Negligible
R191	20.5	20.5	0.03	15.9	15.9	0.00	10.3	10.3	0.00	Negligible

ID	NO <sub>2</sub> 2024 Baseline	NO <sub>2</sub> 2024 With Dev.	NO <sub>2</sub> Increase	PM <sub>10</sub> 2024 Baseline	PM <sub>10</sub> 2024 With Increase	PM <sub>10</sub> Increase	PM <sub>2.5</sub> 2024 Baseline	PM <sub>2.5</sub> 2024 With Dev.	PM <sub>2.5</sub> Increase	IAQM impact
R192	14.0	14.0	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R193	14.0	14.0	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R194	14.0	14.0	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R195	14.0	14.0	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R196	14.0	14.0	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R197	14.0	14.0	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R198	14.0	14.0	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R199	14.0	14.0	0.01	15.4	15.4	0.00	10.1	10.1	0.00	Negligible
R200	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R201	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R202	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R203	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R204	13.8	13.8	0.00	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R205	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R206	13.8	13.9	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R207	13.9	13.9	0.00	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R208	13.9	13.9	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R209	13.8	13.8	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R210	13.9	13.9	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R211	13.9	13.9	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R212	13.9	13.9	0.01	15.4	15.4	0.00	10.0	10.0	0.00	Negligible
R213	13.9	13.9	0.01	15.4	15.4	0.00	10.0	10.1	0.00	Negligible
R214	11.5	11.5	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R215	11.5	11.5	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R216	11.5	11.6	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R217	11.6	11.6	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R218	11.6	11.6	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R219	11.7	11.7	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R220	11.7	11.7	0.01	14.7	14.7	0.00	9.3	9.3	0.00	Negligible
R221	11.6	11.6	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R222	11.6	11.6	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R223	11.6	11.6	0.02	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R224	11.6	11.6	0.01	14.6	14.6	0.00	9.3	9.3	0.00	Negligible
R225	11.8	11.8	0.01	14.7	14.7	0.00	9.3	9.3	0.00	Negligible
R226	11.9	11.9	0.02	14.7	14.7	0.00	9.3	9.3	0.00	Negligible
R227	11.9	12.0	0.02	14.7	14.7	0.00	9.3	9.3	0.00	Negligible
R228	12.0	12.0	0.01	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R229	12.0	12.0	0.02	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R230	12.1	12.1	0.01	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R231	12.3	12.3	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R232	12.2	12.2	0.01	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R233	12.2	12.2	0.01	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R234	12.1	12.2	0.01	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R235	12.2	12.2	0.01	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R236	12.2	12.2	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R237	12.2	12.2	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R238	12.2	12.2	0.01	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R239	12.2	12.2	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible

ID	NO <sub>2</sub> 2024 Baseline	NO <sub>2</sub> 2024 With Dev.	NO <sub>2</sub> Increase	PM <sub>10</sub> 2024 Baseline	PM <sub>10</sub> 2024 With Dev.	PM <sub>10</sub> Increase	PM <sub>2.5</sub> 2024 Baseline	PM <sub>2.5</sub> 2024 With Dev.	PM <sub>2.5</sub> Increase	IAQM impact
R240	12.1	12.1	0.01	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R241	12.2	12.2	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R242	12.2	12.2	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R243	12.1	12.2	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R244	12.1	12.1	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R245	12.1	12.2	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R246	12.1	12.1	0.02	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R247	12.2	12.2	0.01	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R248	12.1	12.1	0.01	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R249	12.1	12.1	0.02	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R250	12.1	12.1	0.02	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R251	12.2	12.2	0.01	14.8	14.8	0.00	9.4	9.4	0.00	Negligible
R252	11.9	11.9	0.01	14.7	14.7	0.00	9.3	9.3	0.00	Negligible
R253	7.5	7.6	0.01	15.3	15.3	0.00	9.1	9.1	0.00	Negligible
R254	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R255	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R256	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R257	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R258	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R259	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R260	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R261	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R262	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R263	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R264	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R265	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R266	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R267	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R268	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R269	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R270	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R271	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R272	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R273	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R274	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R275	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R276	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R277	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R278	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R279	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R280	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R281	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R282	10.7	10.7	0.01	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R283	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R284	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R285	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R286	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R287	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible



ID	NO <sub>2</sub> 2024 Baseline	NO <sub>2</sub> 2024 With Dev.	NO <sub>2</sub> Increase	PM <sub>10</sub> 2024 Baseline	PM <sub>10</sub> 2024 With	PM <sub>10</sub> Increase	PM <sub>2.5</sub> 2024 Baseline	PM <sub>2.5</sub> 2024 With Dev.	PM <sub>2.5</sub> Increase	IAQM impact
R288	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R289	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R290	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R291	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R292	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R293	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R294	10.7	10.7	0.00	14.4	14.4	0.00	9.2	9.2	0.00	Negligible
R295	12.5	12.5	0.01	15.2	15.2	0.00	9.9	9.9	0.00	Negligible
R296	12.9	12.9	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R297	13.1	13.1	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R298	13.1	13.1	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R299	14.3	14.3	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R300	14.3	14.3	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R301	10.0	10.0	0.01	14.6	14.6	0.00	9.5	9.5	0.00	Negligible
R302	10.0	10.0	0.01	14.6	14.6	0.00	9.5	9.5	0.00	Negligible
R303	12.4	12.4	0.00	15.2	15.2	0.00	9.9	9.9	0.00	Negligible
R304	10.0	10.0	0.01	14.6	14.6	0.00	9.5	9.5	0.00	Negligible
R305	11.1	11.1	0.00	14.5	14.5	0.00	9.2	9.2	0.00	Negligible
R306	13.1	13.1	0.01	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R307	12.1	12.1	0.01	15.4	15.4	0.00	9.9	9.9	0.00	Negligible
R308	10.0	10.0	0.00	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R309	13.1	13.1	0.00	15.3	15.3	0.00	10.0	10.0	0.00	Negligible
R310	8.6	8.6	0.01	15.5	15.5	0.00	9.3	9.3	0.00	Negligible
R311	14.3	14.3	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R312	14.3	14.3	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R313	14.3	14.3	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R314	14.3	14.3	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R315	14.3	14.3	0.01	15.4	15.4	0.00	9.8	9.8	0.00	Negligible
R316	12.4	12.4	0.00	15.2	15.2	0.00	9.9	9.9	0.00	Negligible
R317	10.0	10.0	0.00	14.6	14.6	0.00	9.5	9.5	0.00	Negligible
R318	9.9	9.9	0.00	14.7	14.7	0.00	9.4	9.4	0.00	Negligible
R319	14.5	14.6	0.01	15.5	15.5	0.00	10.1	10.1	0.00	Negligible
R320	12.6	12.6	0.00	16.6	16.6	0.00	9.9	9.9	0.00	Negligible
R321	11.9	11.9	0.00	16.5	16.5	0.00	9.9	9.9	0.00	Negligible
R322	13.7	13.7	0.01	16.6	16.6	0.00	10.0	10.0	0.00	Negligible
R323	12.7	12.7	0.01	16.7	16.7	0.00	10.0	10.0	0.00	Negligible
R324	10.1	10.1	0.00	16.1	16.1	0.00	9.5	9.5	0.00	Negligible
R325	10.6	10.6	0.00	16.1	16.1	0.00	9.6	9.6	0.00	Negligible
R326	8.6	8.6	0.00	15.0	15.0	0.00	9.1	9.1	0.00	Negligible
R327	8.8	8.8	0.00	15.0	15.0	0.00	9.1	9.1	0.00	Negligible
R328	8.6	8.6	0.00	15.0	15.0	0.00	9.1	9.1	0.00	Negligible
R329	8.1	8.1	0.00	14.9	14.9	0.00	9.0	9.0	0.00	Negligible
R330	10.4	10.4	0.01	16.2	16.2	0.00	9.5	9.5	0.00	Negligible
R331	17.4	17.5	0.13	15.9	15.9	0.01	9.7	9.7	0.00	Negligible
R332	12.6	12.6	0.05	15.6	15.6	0.00	9.5	9.5	0.00	Negligible
R333	11.3	11.3	0.01	15.9	15.9	0.01	9.5	9.5	0.00	Negligible
R334	11.0	11.0	0.01	15.9	15.9	0.01	9.5	9.5	0.00	Negligible
R335	10.8	10.8	0.01	15.8	15.8	0.00	9.5	9.5	0.00	Negligible

ID	NO <sub>2</sub> 2024 Baseline	NO <sub>2</sub> 2024 With Dev.	NO <sub>2</sub> Increase	PM <sub>10</sub> 2024 Baseline	PM <sub>10</sub> 2024 With	PM <sub>10</sub> Increase	PM <sub>2.5</sub> 2024 Baseline	PM <sub>2.5</sub> 2024 With Dev.	PM <sub>2.5</sub> Increase	IAQM impact
R336	10.2	10.2	0.01	15.4	15.4	0.00	9.4	9.4	0.00	Negligible
R337	11.7	11.7	0.03	15.6	15.6	0.00	9.5	9.5	0.00	Negligible
R338	16.9	17.1	0.12	15.9	15.9	0.01	9.7	9.7	0.00	Negligible

**Table 8B.H2 Modelled Annual Mean NO<sub>2</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R1	8.02	0.09	0%	0.01	8.12	20%
R2	9.81	0.05	0%	0.20	10.06	25%
R3	10.61	0.10	0%	0.01	10.72	27%
R4	12.62	0.20	1%	0.01	12.83	32%
R5	11.22	0.61	2%	0.02	11.31	28%
R6	11.27	0.26	1%	0.08	11.61	29%
R7	11.86	0.29	1%	0.12	12.27	31%
R8	12.63	0.09	0%	0.00	12.72	32%
R9	16.82	0.18	0%	0.04	17.04	43%
R10	12.12	0.13	0%	0.01	12.26	31%
R11	14.07	0.24	1%	0.01	14.32	36%
R12	10.63	0.10	0%	0.01	10.74	27%
R13	11.88	0.09	0%	0.00	11.97	30%
R14	7.81	0.09	0%	0.00	7.90	20%
R15	9.12	0.11	0%	0.02	9.24	23%
R16	9.04	0.33	1%	0.01	9.38	23%
R17	14.19	0.43	1%	0.00	14.63	37%
R18	14.74	0.44	1%	0.00	15.18	38%
R19	20.00	0.48	1%	0.01	20.49	51%
R20	17.16	0.57	1%	0.02	17.75	44%
R21	16.44	0.53	1%	0.01	16.98	42%
R22	15.09	0.48	1%	0.01	15.58	39%
R23	17.85	0.44	1%	0.01	18.30	46%
R24	18.47	0.42	1%	0.02	18.91	47%
R26	19.44	0.42	1%	0.01	19.87	50%
R27	18.16	0.45	1%	0.01	18.62	47%
R28	14.30	0.33	1%	0.00	14.63	37%
R29	14.35	0.56	1%	0.00	14.92	37%
R30	18.45	0.23	1%	0.07	18.76	47%
R31	18.32	0.23	1%	0.10	18.65	47%
R32	16.77	0.22	1%	0.06	17.05	43%
R33	13.44	0.24	1%	0.02	13.70	34%
R34	9.81	0.26	1%	0.01	10.08	25%
R35	17.41	0.26	1%	0.01	17.68	44%
R36	17.73	0.28	1%	0.01	18.02	45%
R37	20.55	0.29	1%	0.00	20.85	52%
R38	24.02	0.33	1%	0.01	24.36	61%
R39	21.04	0.37	1%	0.01	21.42	54%
R40	16.30	0.44	1%	0.00	16.74	42%
R41	27.79	0.39	1%	0.01	28.19	70%
R42	17.39	0.42	1%	0.00	17.81	45%
R43	16.63	0.43	1%	0.00	17.07	43%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R44	14.95	0.44	1%	0.00	15.40	38%
R45	13.70	0.40	1%	0.01	14.11	35%
R46	13.20	0.47	1%	0.01	13.68	34%
R47	24.88	0.43	1%	0.01	25.32	63%
R48	16.43	0.40	1%	0.00	16.83	42%
R49	19.21	0.35	1%	0.01	19.57	49%
R50	15.62	0.29	1%	0.01	15.92	40%
R51	16.36	0.26	1%	0.01	16.63	42%
R52	15.92	0.24	1%	0.01	16.17	40%
R53	18.63	0.22	1%	0.02	18.87	47%
R54	15.85	0.21	1%	0.01	16.07	40%
R55	13.61	0.32	1%	0.00	13.93	35%
R56	13.60	0.46	1%	0.01	14.07	35%
R57	14.19	0.60	1%	0.00	14.79	37%
R58	14.13	0.62	2%	0.00	14.75	37%
R59	12.27	0.46	1%	0.00	12.73	32%
R60	10.94	0.15	0%	0.00	11.09	28%
R61	12.89	0.47	1%	0.01	13.37	33%
R62	13.09	0.48	1%	0.01	13.59	34%
R63	12.90	0.35	1%	0.01	13.26	33%
R64	13.07	0.38	1%	0.00	13.45	34%
R65	15.77	0.39	1%	0.01	16.17	40%
R66	13.40	0.26	1%	0.01	13.67	34%
R67	7.81	0.15	0%	0.00	7.96	20%
R68	7.51	0.14	0%	0.00	7.65	19%
R69	9.15	0.18	0%	0.01	9.34	23%
R70	6.90	0.04	0%	0.00	6.93	17%
R71	6.92	0.06	0%	0.00	6.98	17%
R72	9.59	0.28	1%	0.00	9.87	25%
R73	9.62	0.21	1%	0.00	9.83	25%
R74	9.90	0.27	1%	0.00	10.17	25%
R75	10.59	0.10	0%	0.01	10.70	27%
R76	12.73	0.18	0%	0.03	12.94	32%
R77	9.43	0.16	0%	0.01	9.60	24%
R78	9.60	0.21	1%	0.00	9.81	25%
R79	22.22	0.75	2%	0.02	22.99	57%
R80	13.13	0.36	1%	0.00	13.49	34%
R81	12.94	0.34	1%	0.00	13.28	33%
R82	14.87	0.45	1%	0.00	15.32	38%
R83	9.83	0.02	0%	0.09	9.94	25%
R84	17.02	0.77	2%	0.02	17.82	45%
R85	21.56	0.76	2%	0.02	22.34	56%
R86	14.66	0.75	2%	0.01	15.42	39%
R87	13.23	0.38	1%	0.00	13.61	34%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R88	14.54	0.52	1%	0.00	15.06	38%
R89	13.66	0.20	1%	0.01	13.88	35%
R90	15.89	0.40	1%	0.00	16.29	41%
R91	14.67	0.39	1%	0.00	15.06	38%
R92	9.98	0.23	1%	0.00	10.20	26%
R93	9.93	0.20	1%	0.00	10.13	25%
R94	13.13	0.29	1%	0.01	13.43	34%
R95	14.56	0.21	1%	0.01	14.77	37%
R96	15.99	0.78	2%	0.01	16.78	42%
R97	13.15	0.36	1%	0.00	13.51	34%
R98	13.23	0.47	1%	0.00	13.70	34%
R99	14.87	0.39	1%	0.01	15.27	38%
R100	9.98	0.23	1%	0.00	10.21	26%
R101	9.99	0.24	1%	0.00	10.22	26%
R102	10.60	0.10	0%	0.00	10.70	27%
R103	9.59	0.28	1%	0.00	9.87	25%
R104	8.80	0.12	0%	0.01	8.93	22%
R105	11.10	0.15	0%	0.00	11.25	28%
R106	11.26	0.20	1%	0.01	11.47	29%
R107	14.47	0.75	2%	0.01	15.23	38%
R108	12.20	0.21	1%	0.01	12.43	31%
R109	13.26	0.31	1%	0.00	13.57	34%
R110	13.04	0.30	1%	0.00	13.34	33%
R111	13.84	0.29	1%	0.01	14.14	35%
R112	11.23	0.19	0%	0.00	11.42	29%
R113	13.90	0.29	1%	0.01	14.20	35%
R114	14.05	0.29	1%	0.01	14.35	36%
R115	12.70	0.19	0%	0.00	12.90	32%
R116	10.44	0.18	0%	0.05	10.67	27%
R117	11.46	0.19	0%	0.00	11.65	29%
R118	11.52	0.19	0%	0.00	11.71	29%
R119	15.08	0.32	1%	0.01	15.41	39%
R120	11.53	0.19	0%	0.01	11.73	29%
R121	14.46	0.39	1%	0.01	14.87	37%
R122	14.78	0.40	1%	0.00	15.18	38%
R123	14.49	0.40	1%	0.01	14.90	37%
R124	14.21	0.39	1%	0.00	14.60	37%
R125	14.09	0.44	1%	0.01	14.54	36%
R126	14.00	0.44	1%	0.00	14.44	36%
R127	13.95	0.45	1%	0.01	14.41	36%
R128	13.90	0.45	1%	0.01	14.36	36%
R129	13.48	0.46	1%	0.00	13.94	35%
R130	13.49	0.46	1%	0.01	13.96	35%
R131	13.53	0.46	1%	0.01	14.00	35%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R132	13.55	0.45	1%	0.01	14.02	35%
R133	13.57	0.45	1%	0.00	14.03	35%
R134	13.59	0.45	1%	0.00	14.04	35%
R135	13.61	0.45	1%	0.01	14.07	35%
R136	13.46	0.46	1%	0.00	13.92	35%
R137	13.48	0.46	1%	0.00	13.94	35%
R138	13.49	0.46	1%	0.00	13.95	35%
R139	13.51	0.46	1%	0.00	13.97	35%
R140	13.53	0.46	1%	0.00	13.99	35%
R141	13.54	0.46	1%	0.00	14.00	35%
R142	13.55	0.46	1%	0.01	14.02	35%
R143	13.57	0.45	1%	0.01	14.04	35%
R144	13.59	0.45	1%	0.00	14.05	35%
R145	14.24	0.39	1%	0.00	14.63	37%
R146	14.31	0.39	1%	0.01	14.71	37%
R147	14.44	0.39	1%	0.00	14.83	37%
R148	14.53	0.40	1%	0.00	14.93	37%
R149	14.91	0.40	1%	0.00	15.31	38%
R150	15.01	0.40	1%	0.01	15.42	39%
R151	15.19	0.40	1%	0.00	15.59	39%
R152	15.31	0.40	1%	0.00	15.71	39%
R153	15.04	0.40	1%	0.00	15.44	39%
R154	14.56	0.40	1%	0.00	14.96	37%
R155	14.40	0.40	1%	0.01	14.81	37%
R156	14.30	0.40	1%	0.00	14.70	37%
R157	14.25	0.39	1%	0.01	14.65	37%
R158	14.28	0.39	1%	0.00	14.67	37%
R159	14.35	0.39	1%	0.01	14.76	37%
R160	19.50	0.43	1%	0.01	19.94	50%
R161	19.27	0.43	1%	0.01	19.71	49%
R162	18.00	0.43	1%	0.01	18.44	46%
R163	18.06	0.43	1%	0.01	18.50	46%
R164	18.96	0.43	1%	0.00	19.39	48%
R165	17.99	0.43	1%	0.01	18.43	46%
R166	17.87	0.43	1%	0.00	18.30	46%
R167	18.89	0.43	1%	0.01	19.33	48%
R168	17.80	0.43	1%	0.00	18.23	46%
R169	17.45	0.43	1%	0.00	17.88	45%
R170	18.82	0.43	1%	0.01	19.26	48%
R171	18.06	0.43	1%	0.01	18.50	46%
R172	18.47	0.43	1%	0.01	18.91	47%
R173	18.53	0.43	1%	0.00	18.96	47%
R174	18.46	0.43	1%	0.00	18.89	47%
R175	18.53	0.43	1%	0.00	18.96	47%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R176	18.24	0.43	1%	0.00	18.67	47%
R177	18.16	0.43	1%	0.00	18.59	46%
R178	18.07	0.43	1%	0.01	18.51	46%
R179	20.31	0.43	1%	0.01	20.75	52%
R180	19.92	0.43	1%	0.00	20.35	51%
R181	20.04	0.43	1%	0.00	20.47	51%
R182	19.66	0.43	1%	0.00	20.09	50%
R183	19.48	0.43	1%	0.00	19.91	50%
R184	19.41	0.43	1%	0.00	19.84	50%
R185	19.33	0.43	1%	0.00	19.76	49%
R186	18.99	0.43	1%	0.01	19.43	49%
R187	18.91	0.43	1%	0.00	19.34	48%
R188	18.59	0.43	1%	0.01	19.03	48%
R189	18.66	0.43	1%	0.01	19.10	48%
R190	18.57	0.43	1%	0.01	19.01	48%
R191	19.33	0.43	1%	0.01	19.77	49%
R192	13.70	0.38	1%	0.00	14.08	35%
R193	13.70	0.38	1%	0.01	14.09	35%
R194	13.72	0.38	1%	0.00	14.10	35%
R195	13.73	0.38	1%	0.00	14.11	35%
R196	13.71	0.38	1%	0.00	14.09	35%
R197	13.72	0.38	1%	0.01	14.11	35%
R198	13.70	0.38	1%	0.01	14.09	35%
R199	13.72	0.38	1%	0.01	14.11	35%
R200	13.50	0.38	1%	0.00	13.88	35%
R201	13.51	0.38	1%	0.01	13.90	35%
R202	13.54	0.38	1%	0.00	13.92	35%
R203	13.50	0.38	1%	0.01	13.89	35%
R204	13.52	0.38	1%	0.00	13.90	35%
R205	13.55	0.38	1%	0.00	13.93	35%
R206	13.57	0.38	1%	0.01	13.96	35%
R207	13.59	0.38	1%	0.00	13.97	35%
R208	13.61	0.38	1%	0.00	13.99	35%
R209	13.57	0.38	1%	0.00	13.95	35%
R210	13.63	0.38	1%	0.01	14.02	35%
R211	13.61	0.38	1%	0.00	13.99	35%
R212	13.62	0.38	1%	0.01	14.01	35%
R213	13.65	0.38	1%	0.00	14.03	35%
R214	11.22	0.21	1%	0.01	11.44	29%
R215	11.24	0.21	1%	0.00	11.45	29%
R216	11.27	0.21	1%	0.00	11.48	29%
R217	11.29	0.21	1%	0.01	11.51	29%
R218	11.32	0.21	1%	0.01	11.53	29%
R219	11.36	0.20	1%	0.01	11.57	29%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R220	11.41	0.20	1%	0.00	11.61	29%
R221	11.32	0.21	1%	0.01	11.53	29%
R222	11.31	0.21	1%	0.01	11.52	29%
R223	11.31	0.20	1%	0.01	11.52	29%
R224	11.28	0.21	1%	0.01	11.49	29%
R225	11.46	0.20	1%	0.00	11.66	29%
R226	11.50	0.20	1%	0.01	11.71	29%
R227	11.55	0.20	1%	0.01	11.76	29%
R228	11.62	0.20	0%	0.00	11.82	30%
R229	11.58	0.20	0%	0.01	11.78	29%
R230	11.66	0.19	0%	0.01	11.86	30%
R231	11.80	0.19	0%	0.00	11.99	30%
R232	11.72	0.19	0%	0.00	11.91	30%
R233	11.73	0.20	0%	0.00	11.92	30%
R234	11.70	0.20	0%	0.01	11.90	30%
R235	11.71	0.20	0%	0.01	11.91	30%
R236	11.72	0.20	0%	0.00	11.92	30%
R237	11.73	0.20	0%	0.01	11.94	30%
R238	11.72	0.20	0%	0.01	11.93	30%
R239	11.76	0.20	0%	0.00	11.96	30%
R240	11.68	0.20	0%	0.00	11.88	30%
R241	11.73	0.20	0%	0.01	11.94	30%
R242	11.72	0.20	0%	0.00	11.92	30%
R243	11.71	0.20	0%	0.00	11.91	30%
R244	11.70	0.20	0%	0.00	11.90	30%
R245	11.71	0.20	0%	0.01	11.92	30%
R246	11.70	0.20	0%	0.00	11.90	30%
R247	11.73	0.20	0%	0.00	11.93	30%
R248	11.67	0.20	1%	0.01	11.88	30%
R249	11.67	0.20	1%	0.01	11.88	30%
R250	11.64	0.20	1%	0.01	11.85	30%
R251	11.74	0.20	0%	0.01	11.95	30%
R252	11.51	0.20	1%	0.00	11.71	29%
R253	7.51	0.06	0%	0.00	7.57	19%
R254	10.64	0.11	0%	0.01	10.76	27%
R255	10.65	0.11	0%	0.00	10.76	27%
R256	10.65	0.11	0%	0.00	10.76	27%
R257	10.66	0.12	0%	0.00	10.77	27%
R258	10.66	0.12	0%	0.00	10.77	27%
R259	10.65	0.11	0%	0.00	10.76	27%
R260	10.65	0.11	0%	0.00	10.76	27%
R261	10.66	0.12	0%	0.00	10.77	27%
R262	10.66	0.12	0%	0.00	10.77	27%
R263	10.63	0.11	0%	0.00	10.74	27%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R264	10.63	0.11	0%	0.00	10.74	27%
R265	10.63	0.11	0%	0.00	10.74	27%
R266	10.63	0.11	0%	0.00	10.74	27%
R267	10.63	0.11	0%	0.00	10.74	27%
R268	10.63	0.11	0%	0.00	10.74	27%
R269	10.63	0.11	0%	0.00	10.74	27%
R270	10.63	0.11	0%	0.00	10.74	27%
R271	10.63	0.11	0%	0.00	10.74	27%
R272	10.63	0.11	0%	0.00	10.74	27%
R273	10.63	0.11	0%	0.00	10.74	27%
R274	10.63	0.11	0%	0.00	10.74	27%
R275	10.63	0.11	0%	0.00	10.74	27%
R276	10.63	0.11	0%	0.00	10.74	27%
R277	10.63	0.11	0%	0.00	10.74	27%
R278	10.63	0.11	0%	0.00	10.74	27%
R279	10.63	0.11	0%	0.00	10.74	27%
R280	10.63	0.11	0%	0.00	10.74	27%
R281	10.63	0.11	0%	0.00	10.74	27%
R282	10.63	0.11	0%	0.00	10.74	27%
R283	10.63	0.11	0%	0.00	10.74	27%
R284	10.65	0.11	0%	0.00	10.76	27%
R285	10.65	0.11	0%	0.00	10.76	27%
R286	10.65	0.11	0%	0.00	10.76	27%
R287	10.65	0.11	0%	0.00	10.76	27%
R288	10.65	0.11	0%	0.00	10.76	27%
R289	10.65	0.11	0%	0.00	10.76	27%
R290	10.65	0.11	0%	0.00	10.76	27%
R291	10.65	0.11	0%	0.00	10.76	27%
R292	10.65	0.11	0%	0.00	10.76	27%
R293	10.65	0.11	0%	0.00	10.76	27%
R294	10.65	0.11	0%	0.00	10.76	27%
R295	12.41	0.25	1%	0.00	12.66	32%
R296	12.80	0.30	1%	0.00	13.10	33%
R297	12.91	0.33	1%	0.00	13.24	33%
R298	12.97	0.35	1%	0.00	13.32	33%
R299	14.14	0.58	1%	0.01	14.73	37%
R300	14.14	0.58	1%	0.00	14.72	37%
R301	9.92	0.20	0%	0.00	10.11	25%
R302	9.94	0.21	1%	0.00	10.15	25%
R303	12.33	0.21	1%	0.00	12.55	31%
R304	9.92	0.20	0%	0.00	10.11	25%
R305	10.96	0.30	1%	0.00	11.26	28%
R306	12.94	0.46	1%	0.00	13.40	34%
R307	11.98	0.10	0%	0.01	12.09	30%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R308	9.87	0.26	1%	0.00	10.13	25%
R309	12.90	0.33	1%	0.00	13.23	33%
R310	8.58	0.15	0%	0.00	8.73	22%
R311	14.14	0.58	1%	0.00	14.72	37%
R312	14.14	0.58	1%	0.01	14.73	37%
R313	14.14	0.58	1%	0.01	14.73	37%
R314	14.14	0.58	1%	0.01	14.73	37%
R315	14.14	0.58	1%	0.01	14.73	37%
R316	12.30	0.24	1%	0.00	12.54	31%
R317	9.92	0.20	1%	0.01	10.13	25%
R318	9.84	0.24	1%	0.00	10.08	25%
R319	14.13	0.19	0%	0.00	14.32	36%
R320	11.56	0.17	0%	0.02	11.74	29%
R321	11.01	0.12	0%	0.01	11.14	28%
R322	12.48	0.15	0%	0.01	12.66	32%
R323	11.65	0.13	0%	0.01	11.79	29%
R324	9.36	0.11	0%	0.00	9.48	24%
R325	10.05	0.14	0%	0.01	10.19	25%
R326	8.27	0.13	0%	0.01	8.41	21%
R327	8.44	0.12	0%	0.03	8.56	21%
R328	8.22	0.11	0%	0.01	8.35	21%
R329	7.81	0.10	0%	0.01	7.91	20%
R330	9.56	0.09	0%	0.00	9.66	24%
R331	16.20	0.15	0%	0.00	16.40	41%
R332	11.99	0.14	0%	0.01	12.15	30%
R333	10.47	0.11	0%	0.01	10.60	26%
R334	10.28	0.11	0%	0.03	10.39	26%
R335	10.10	0.11	0%	0.01	10.21	26%
R336	9.94	0.16	0%	0.01	10.10	25%
R337	11.19	0.14	0%	0.00	11.34	28%
R338	15.81	0.14	0%	0.01	16.01	40%

**Table 8B.H3 Modelled 1-hour Mean NO<sub>2</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R1	16.04	15.64	8%	0.02	31.70	16%
R2	19.62	9.93	5%	0.40	29.94	15%
R3	21.22	19.95	10%	0.02	41.19	21%
R4	25.24	18.35	9%	0.02	43.60	22%
R5	22.44	29.79	15%	0.04	52.26	26%
R6	22.54	27.76	14%	0.16	50.45	25%
R7	23.72	23.86	12%	0.24	47.81	24%
R8	25.26	14.70	7%	0.00	39.96	20%
R9	33.64	15.44	8%	0.08	49.17	25%
R10	24.24	12.05	6%	0.02	36.31	18%
R11	28.14	15.27	8%	0.02	43.43	22%
R12	21.26	9.20	5%	0.02	30.48	15%
R13	23.76	10.51	5%	0.00	34.27	17%
R14	15.62	13.12	7%	0.00	28.74	14%
R15	18.24	14.83	7%	0.04	33.11	17%
R16	18.08	17.19	9%	0.02	35.29	18%
R17	28.38	19.19	10%	0.00	47.58	24%
R18	29.48	18.16	9%	0.00	47.65	24%
R19	40.00	18.42	9%	0.02	58.45	29%
R20	34.32	20.18	10%	0.04	54.54	27%
R21	32.88	19.26	10%	0.02	52.16	26%
R22	30.18	16.31	8%	0.02	46.51	23%
R23	35.70	16.19	8%	0.02	51.91	26%
R24	36.94	15.38	8%	0.04	52.37	26%
R26	38.88	14.71	7%	0.02	53.62	27%
R27	36.32	17.43	9%	0.02	53.77	27%
R28	28.60	11.74	6%	0.00	40.34	20%
R29	28.70	17.24	9%	0.00	45.94	23%
R30	36.90	8.83	4%	0.14	45.88	23%
R31	36.64	8.98	4%	0.20	45.82	23%
R32	33.54	8.36	4%	0.12	42.03	21%
R33	26.88	9.07	5%	0.04	36.00	18%
R34	19.62	9.72	5%	0.02	29.37	15%
R35	34.82	9.56	5%	0.02	44.41	22%
R36	35.46	9.54	5%	0.02	45.02	23%
R37	41.10	11.27	6%	0.00	52.37	26%
R38	48.04	12.89	6%	0.02	60.96	30%
R39	42.08	14.34	7%	0.02	56.44	28%
R40	32.60	14.60	7%	0.00	47.21	24%
R41	55.58	13.78	7%	0.02	69.38	35%
R42	34.78	14.13	7%	0.00	48.92	24%
R43	33.26	13.64	7%	0.00	46.90	23%
R44	29.90	12.91	6%	0.00	42.81	21%
R45	27.40	10.81	5%	0.02	38.24	19%
R46	26.40	12.28	6%	0.02	38.70	19%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R47	49.76	11.10	6%	0.02	60.88	30%
R48	32.86	10.43	5%	0.00	43.29	22%
R49	38.42	10.27	5%	0.02	48.71	24%
R50	31.24	9.13	5%	0.02	40.39	20%
R51	32.72	8.56	4%	0.02	41.31	21%
R52	31.84	8.44	4%	0.02	40.30	20%
R53	37.26	9.27	5%	0.04	46.58	23%
R54	31.70	9.53	5%	0.02	41.25	21%
R55	27.22	10.00	5%	0.00	37.22	19%
R56	27.20	11.96	6%	0.02	39.18	20%
R57	28.38	15.12	8%	0.00	43.50	22%
R58	28.26	15.70	8%	0.00	43.97	22%
R59	24.54	16.20	8%	0.00	40.74	20%
R60	21.88	10.28	5%	0.00	32.16	16%
R61	25.78	14.05	7%	0.02	39.86	20%
R62	26.18	12.59	6%	0.02	38.79	19%
R63	25.80	12.35	6%	0.02	38.17	19%
R64	26.14	11.33	6%	0.00	37.47	19%
R65	31.54	10.61	5%	0.02	42.17	21%
R66	26.80	10.01	5%	0.02	36.83	18%
R67	15.62	9.46	5%	0.00	25.08	13%
R68	15.02	11.91	6%	0.00	26.93	13%
R69	18.30	16.57	8%	0.02	34.88	17%
R70	13.80	4.47	2%	0.00	18.27	9%
R71	13.84	7.56	4%	0.00	21.40	11%
R72	19.19	9.98	5%	0.00	29.17	15%
R73	19.25	7.62	4%	0.00	26.87	13%
R74	19.81	7.66	4%	0.00	27.47	14%
R75	21.18	6.43	3%	0.02	27.63	14%
R76	25.46	7.73	4%	0.06	33.25	17%
R77	18.86	13.56	7%	0.02	32.44	16%
R78	19.20	22.39	11%	0.00	41.58	21%
R79	44.44	22.85	11%	0.04	67.34	34%
R80	26.26	9.90	5%	0.00	36.16	18%
R81	25.88	10.22	5%	0.00	36.11	18%
R82	29.74	13.73	7%	0.00	43.47	22%
R83	19.66	5.45	3%	0.18	25.29	13%
R84	34.04	23.91	12%	0.04	57.99	29%
R85	43.12	22.53	11%	0.04	65.70	33%
R86	29.32	27.21	14%	0.02	56.55	28%
R87	26.46	10.48	5%	0.00	36.94	18%
R88	29.08	16.65	8%	0.00	45.73	23%
R89	27.33	7.99	4%	0.02	35.34	18%
R90	31.78	10.52	5%	0.00	42.30	21%
R91	29.34	10.26	5%	0.00	39.60	20%
R92	19.95	6.43	3%	0.00	26.38	13%
R93	19.85	5.89	3%	0.00	25.74	13%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R94	26.26	15.98	8%	0.02	42.26	21%
R95	29.12	9.68	5%	0.02	38.82	19%
R96	31.98	23.40	12%	0.02	55.40	28%
R97	26.30	9.97	5%	0.00	36.27	18%
R98	26.46	12.36	6%	0.00	38.83	19%
R99	29.74	10.31	5%	0.02	40.07	20%
R100	19.95	6.62	3%	0.00	26.57	13%
R101	19.97	6.84	3%	0.00	26.81	13%
R102	21.20	6.44	3%	0.00	27.64	14%
R103	19.19	9.90	5%	0.00	29.09	15%
R104	17.59	5.54	3%	0.02	23.15	12%
R105	22.20	9.86	5%	0.00	32.05	16%
R106	22.52	10.88	5%	0.02	33.42	17%
R107	28.94	26.98	13%	0.02	55.95	28%
R108	24.40	26.06	13%	0.02	50.49	25%
R109	26.52	10.00	5%	0.00	36.52	18%
R110	26.08	10.72	5%	0.00	36.81	18%
R111	27.68	9.34	5%	0.02	37.04	19%
R112	22.46	8.80	4%	0.00	31.26	16%
R113	27.80	8.95	4%	0.02	36.77	18%
R114	28.10	9.00	5%	0.02	37.12	19%
R115	25.41	7.51	4%	0.00	32.91	16%
R116	20.88	26.90	13%	0.10	47.88	24%
R117	22.92	9.22	5%	0.00	32.14	16%
R118	23.04	9.22	5%	0.00	32.26	16%
R119	30.16	9.44	5%	0.02	39.62	20%
R120	23.06	9.23	5%	0.02	32.31	16%
R121	28.92	10.38	5%	0.02	39.32	20%
R122	29.56	10.44	5%	0.00	40.00	20%
R123	28.98	10.53	5%	0.02	39.54	20%
R124	28.42	10.51	5%	0.00	38.93	19%
R125	28.18	11.43	6%	0.02	39.63	20%
R126	28.00	11.46	6%	0.00	39.46	20%
R127	27.90	11.49	6%	0.02	39.41	20%
R128	27.80	11.50	6%	0.02	39.32	20%
R129	26.96	11.77	6%	0.00	38.73	19%
R130	26.98	11.75	6%	0.02	38.75	19%
R131	27.06	11.70	6%	0.02	38.78	19%
R132	27.10	11.70	6%	0.02	38.82	19%
R133	27.14	11.71	6%	0.00	38.86	19%
R134	27.18	11.70	6%	0.00	38.88	19%
R135	27.22	11.68	6%	0.02	38.93	19%
R136	26.92	11.79	6%	0.00	38.71	19%
R137	26.96	11.76	6%	0.00	38.73	19%
R138	26.98	11.75	6%	0.00	38.73	19%
R139	27.02	11.72	6%	0.00	38.74	19%
R140	27.06	11.72	6%	0.00	38.78	19%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R141	27.08	11.72	6%	0.00	38.80	19%
R142	27.10	11.73	6%	0.02	38.85	19%
R143	27.14	11.72	6%	0.02	38.88	19%
R144	27.18	11.70	6%	0.00	38.88	19%
R145	28.48	10.30	5%	0.00	38.79	19%
R146	28.62	10.34	5%	0.02	38.98	19%
R147	28.88	10.40	5%	0.00	39.28	20%
R148	29.06	10.40	5%	0.00	39.47	20%
R149	29.82	10.48	5%	0.00	40.30	20%
R150	30.02	10.50	5%	0.02	40.54	20%
R151	30.38	10.53	5%	0.00	40.91	20%
R152	30.62	10.55	5%	0.00	41.17	21%
R153	30.08	10.50	5%	0.00	40.58	20%
R154	29.12	10.48	5%	0.00	39.60	20%
R155	28.80	10.58	5%	0.02	39.40	20%
R156	28.60	10.55	5%	0.00	39.15	20%
R157	28.50	10.53	5%	0.02	39.05	20%
R158	28.56	10.54	5%	0.00	39.10	20%
R159	28.70	10.49	5%	0.02	39.21	20%
R160	39.00	11.19	6%	0.02	50.22	25%
R161	38.54	11.17	6%	0.02	49.73	25%
R162	36.00	11.20	6%	0.02	47.23	24%
R163	36.12	11.22	6%	0.02	47.37	24%
R164	37.92	11.18	6%	0.00	49.10	25%
R165	35.98	11.26	6%	0.02	47.26	24%
R166	35.74	11.26	6%	0.00	47.00	24%
R167	37.78	11.16	6%	0.02	48.96	24%
R168	35.60	11.25	6%	0.00	46.85	23%
R169	34.90	11.28	6%	0.00	46.18	23%
R170	37.64	11.18	6%	0.02	48.84	24%
R171	36.12	11.19	6%	0.02	47.33	24%
R172	36.94	11.26	6%	0.02	48.22	24%
R173	37.06	11.20	6%	0.00	48.26	24%
R174	36.92	11.25	6%	0.00	48.17	24%
R175	37.06	11.24	6%	0.00	48.30	24%
R176	36.48	11.23	6%	0.00	47.72	24%
R177	36.32	11.25	6%	0.00	47.57	24%
R178	36.14	11.26	6%	0.02	47.43	24%
R179	40.62	11.16	6%	0.02	51.81	26%
R180	39.84	11.16	6%	0.00	51.00	25%
R181	40.08	11.16	6%	0.00	51.24	26%
R182	39.32	11.15	6%	0.00	50.47	25%
R183	38.96	11.15	6%	0.00	50.11	25%
R184	38.82	11.16	6%	0.00	49.98	25%
R185	38.66	11.19	6%	0.00	49.85	25%
R186	37.98	11.23	6%	0.02	49.23	25%
R187	37.82	11.23	6%	0.00	49.05	25%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R188	37.18	11.23	6%	0.02	48.43	24%
R189	37.32	11.23	6%	0.02	48.57	24%
R190	37.14	11.25	6%	0.02	48.41	24%
R191	38.66	11.19	6%	0.02	49.87	25%
R192	27.40	10.86	5%	0.00	38.26	19%
R193	27.40	10.85	5%	0.02	38.27	19%
R194	27.44	10.84	5%	0.00	38.28	19%
R195	27.46	10.83	5%	0.00	38.29	19%
R196	27.42	10.84	5%	0.00	38.26	19%
R197	27.44	10.84	5%	0.02	38.30	19%
R198	27.40	10.85	5%	0.02	38.27	19%
R199	27.44	10.83	5%	0.02	38.30	19%
R200	27.00	11.07	6%	0.00	38.07	19%
R201	27.02	11.06	6%	0.02	38.10	19%
R202	27.08	11.04	6%	0.00	38.12	19%
R203	27.00	11.07	6%	0.02	38.09	19%
R204	27.04	11.06	6%	0.00	38.10	19%
R205	27.10	11.04	6%	0.00	38.14	19%
R206	27.14	11.01	6%	0.02	38.17	19%
R207	27.18	10.99	5%	0.00	38.17	19%
R208	27.22	10.98	5%	0.00	38.20	19%
R209	27.14	11.01	6%	0.00	38.16	19%
R210	27.26	10.96	5%	0.02	38.24	19%
R211	27.22	10.98	5%	0.00	38.20	19%
R212	27.24	10.97	5%	0.02	38.23	19%
R213	27.30	10.94	5%	0.00	38.24	19%
R214	22.44	10.46	5%	0.02	32.92	16%
R215	22.48	10.45	5%	0.00	32.93	16%
R216	22.54	10.43	5%	0.00	32.97	16%
R217	22.58	10.46	5%	0.02	33.06	17%
R218	22.64	10.43	5%	0.02	33.09	17%
R219	22.72	10.47	5%	0.02	33.20	17%
R220	22.82	10.50	5%	0.00	33.32	17%
R221	22.64	10.55	5%	0.02	33.21	17%
R222	22.62	10.62	5%	0.02	33.26	17%
R223	22.62	10.62	5%	0.02	33.26	17%
R224	22.56	10.64	5%	0.02	33.22	17%
R225	22.92	10.48	5%	0.00	33.40	17%
R226	23.00	10.42	5%	0.02	33.43	17%
R227	23.10	10.39	5%	0.02	33.51	17%
R228	23.24	10.40	5%	0.00	33.64	17%
R229	23.16	10.61	5%	0.02	33.79	17%
R230	23.32	10.54	5%	0.02	33.87	17%
R231	23.60	10.47	5%	0.00	34.07	17%
R232	23.44	10.54	5%	0.00	33.98	17%
R233	23.46	10.53	5%	0.00	33.99	17%
R234	23.40	10.50	5%	0.02	33.92	17%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R235	23.42	10.48	5%	0.02	33.91	17%
R236	23.44	10.46	5%	0.00	33.89	17%
R237	23.46	10.45	5%	0.02	33.92	17%
R238	23.44	10.46	5%	0.02	33.92	17%
R239	23.52	10.46	5%	0.00	33.98	17%
R240	23.36	10.39	5%	0.00	33.75	17%
R241	23.46	10.40	5%	0.02	33.87	17%
R242	23.44	10.34	5%	0.00	33.78	17%
R243	23.42	10.30	5%	0.00	33.72	17%
R244	23.40	10.33	5%	0.00	33.73	17%
R245	23.42	10.33	5%	0.02	33.77	17%
R246	23.40	10.30	5%	0.00	33.70	17%
R247	23.46	10.28	5%	0.00	33.74	17%
R248	23.34	10.22	5%	0.02	33.58	17%
R249	23.34	10.25	5%	0.02	33.61	17%
R250	23.28	10.29	5%	0.02	33.59	17%
R251	23.48	10.29	5%	0.02	33.78	17%
R252	23.02	10.24	5%	0.00	33.25	17%
R253	15.01	7.77	4%	0.00	22.78	11%
R254	21.28	7.71	4%	0.02	29.01	15%
R255	21.30	7.81	4%	0.00	29.11	15%
R256	21.30	7.83	4%	0.00	29.12	15%
R257	21.32	7.89	4%	0.00	29.21	15%
R258	21.32	7.91	4%	0.00	29.22	15%
R259	21.30	7.82	4%	0.00	29.12	15%
R260	21.30	7.84	4%	0.00	29.13	15%
R261	21.32	7.90	4%	0.00	29.22	15%
R262	21.32	7.93	4%	0.00	29.24	15%
R263	21.26	7.52	4%	0.00	28.78	14%
R264	21.26	7.49	4%	0.00	28.75	14%
R265	21.26	7.49	4%	0.00	28.75	14%
R266	21.26	7.49	4%	0.00	28.75	14%
R267	21.26	7.49	4%	0.00	28.75	14%
R268	21.26	7.49	4%	0.00	28.75	14%
R269	21.26	7.49	4%	0.00	28.75	14%
R270	21.26	7.49	4%	0.00	28.75	14%
R271	21.26	7.49	4%	0.00	28.75	14%
R272	21.26	7.49	4%	0.00	28.75	14%
R273	21.26	7.49	4%	0.00	28.75	14%
R274	21.26	7.49	4%	0.00	28.75	14%
R275	21.26	7.49	4%	0.00	28.75	14%
R276	21.26	7.49	4%	0.00	28.75	14%
R277	21.26	7.49	4%	0.00	28.75	14%
R278	21.26	7.49	4%	0.00	28.75	14%
R279	21.26	7.49	4%	0.00	28.75	14%
R280	21.26	7.49	4%	0.00	28.75	14%
R281	21.26	7.49	4%	0.00	28.75	14%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R282	21.26	7.49	4%	0.00	28.75	14%
R283	21.26	7.56	4%	0.00	28.82	14%
R284	21.30	7.76	4%	0.00	29.06	15%
R285	21.30	7.76	4%	0.00	29.06	15%
R286	21.30	7.76	4%	0.00	29.06	15%
R287	21.30	7.76	4%	0.00	29.06	15%
R288	21.30	7.76	4%	0.00	29.06	15%
R289	21.30	7.76	4%	0.00	29.06	15%
R290	21.30	7.76	4%	0.00	29.06	15%
R291	21.30	7.76	4%	0.00	29.06	15%
R292	21.30	7.76	4%	0.00	29.06	15%
R293	21.30	7.76	4%	0.00	29.06	15%
R294	21.30	7.76	4%	0.00	29.06	15%
R295	24.83	7.51	4%	0.00	32.33	16%
R296	25.60	8.10	4%	0.00	33.70	17%
R297	25.82	10.12	5%	0.00	35.94	18%
R298	25.94	10.18	5%	0.00	36.12	18%
R299	28.28	14.60	7%	0.02	42.91	21%
R300	28.28	14.75	7%	0.00	43.03	22%
R301	19.83	5.71	3%	0.00	25.54	13%
R302	19.87	6.07	3%	0.00	25.94	13%
R303	24.67	6.80	3%	0.00	31.46	16%
R304	19.83	5.81	3%	0.00	25.65	13%
R305	21.92	11.93	6%	0.00	33.85	17%
R306	25.88	13.15	7%	0.00	39.03	20%
R307	23.96	12.00	6%	0.02	35.98	18%
R308	19.75	7.24	4%	0.00	26.99	13%
R309	25.80	9.75	5%	0.00	35.55	18%
R310	17.16	5.23	3%	0.00	22.39	11%
R311	28.28	14.76	7%	0.00	43.04	22%
R312	28.28	14.75	7%	0.02	43.05	22%
R313	28.28	14.69	7%	0.02	43.00	21%
R314	28.28	14.70	7%	0.02	43.00	22%
R315	28.28	14.63	7%	0.02	42.94	21%
R316	24.61	6.90	3%	0.00	31.51	16%
R317	19.83	5.83	3%	0.02	25.68	13%
R318	19.69	6.84	3%	0.00	26.53	13%
R319	28.26	8.44	4%	0.00	36.70	18%
R320	23.12	7.28	4%	0.04	30.43	15%
R321	22.02	5.86	3%	0.02	27.91	14%
R322	24.96	6.31	3%	0.02	31.33	16%
R323	23.30	6.05	3%	0.02	29.37	15%
R324	18.72	5.33	3%	0.00	24.08	12%
R325	20.10	5.94	3%	0.02	26.04	13%
R326	16.55	5.78	3%	0.02	22.35	11%
R327	16.89	5.44	3%	0.06	22.33	11%
R328	16.45	4.93	2%	0.02	21.39	11%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R329	15.62	4.56	2%	0.02	20.18	10%
R330	19.12	5.02	3%	0.00	24.17	12%
R331	32.39	5.95	3%	0.00	38.47	19%
R332	23.97	5.78	3%	0.02	29.80	15%
R333	20.95	4.05	2%	0.02	25.01	13%
R334	20.57	3.86	2%	0.06	24.43	12%
R335	20.21	3.92	2%	0.02	24.13	12%
R336	19.87	6.41	3%	0.02	26.29	13%
R337	22.37	5.74	3%	0.00	28.15	14%
R338	31.61	5.82	3%	0.02	37.55	19%

**Table 8B.H4 Modelled Annual Mean PM<sub>10</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R1	14.38	0.01	0%	0.11	14.39	36%
R2	15.80	0.00	0%	0.19	15.81	40%
R3	16.13	0.01	0%	0.51	16.14	40%
R4	16.84	0.01	0%	1.23	16.86	42%
R5	16.34	0.04	0%	0.72	16.38	41%
R6	16.14	0.02	0%	0.82	16.20	40%
R7	15.95	0.02	0%	0.60	15.98	40%
R8	15.61	0.01	0%	0.28	15.62	39%
R9	16.04	0.01	0%	0.71	16.06	40%
R10	15.44	0.01	0%	0.11	15.45	39%
R11	16.05	0.01	0%	0.72	16.07	40%
R12	14.42	0.01	0%	0.06	14.43	36%
R13	15.39	0.01	0%	0.06	15.40	38%
R14	14.33	0.01	0%	0.06	14.33	36%
R15	15.47	0.01	0%	0.11	15.48	39%
R16	16.47	0.02	0%	0.13	16.49	41%
R17	15.38	0.03	0%	0.14	15.40	39%
R18	15.47	0.03	0%	0.24	15.50	39%
R19	16.32	0.03	0%	1.09	16.35	41%
R20	16.31	0.03	0%	1.08	16.35	41%
R21	16.02	0.03	0%	0.79	16.05	40%
R22	15.56	0.03	0%	0.32	15.59	39%
R23	16.41	0.03	0%	1.18	16.44	41%
R24	16.47	0.02	0%	1.24	16.50	41%
R26	16.16	0.02	0%	0.93	16.19	40%
R27	16.10	0.03	0%	0.87	16.13	40%
R28	15.39	0.02	0%	0.16	15.41	39%
R29	15.40	0.03	0%	0.17	15.44	39%
R30	17.05	0.01	0%	1.43	17.07	43%
R31	16.71	0.01	0%	1.09	16.73	42%
R32	16.75	0.01	0%	1.14	16.77	42%
R33	16.99	0.01	0%	1.37	17.01	43%
R34	16.65	0.02	0%	0.31	16.67	42%
R35	16.47	0.02	0%	1.24	16.49	41%
R36	16.54	0.02	0%	1.31	16.56	41%
R37	16.31	0.02	0%	1.08	16.33	41%
R38	16.29	0.02	0%	1.05	16.31	41%
R39	16.03	0.02	0%	0.80	16.05	40%
R40	15.80	0.03	0%	0.57	15.83	40%
R41	16.63	0.02	0%	1.40	16.65	42%
R42	16.20	0.03	0%	0.97	16.22	41%
R43	16.19	0.03	0%	0.95	16.21	41%
R44	15.63	0.03	0%	0.39	15.65	39%
R45	15.56	0.02	0%	0.38	15.59	39%
R46	15.36	0.03	0%	0.18	15.39	38%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R47	16.33	0.03	0%	1.15	16.36	41%
R48	15.62	0.02	0%	0.43	15.64	39%
R49	15.93	0.02	0%	0.75	15.95	40%
R50	16.14	0.02	0%	0.96	16.16	40%
R51	16.44	0.02	0%	1.25	16.45	41%
R52	16.16	0.01	0%	0.98	16.17	40%
R53	17.20	0.01	0%	2.03	17.23	43%
R54	16.17	0.01	0%	1.81	16.19	40%
R55	15.39	0.02	0%	0.21	15.41	39%
R56	15.41	0.03	0%	0.23	15.44	39%
R57	15.37	0.04	0%	0.14	15.41	39%
R58	15.36	0.04	0%	0.12	15.39	38%
R59	15.48	0.03	0%	0.15	15.51	39%
R60	14.52	0.01	0%	0.15	14.53	36%
R61	15.30	0.03	0%	0.12	15.33	38%
R62	15.32	0.03	0%	0.14	15.35	38%
R63	15.31	0.02	0%	0.13	15.33	38%
R64	15.32	0.02	0%	0.14	15.34	38%
R65	15.85	0.02	0%	0.67	15.87	40%
R66	15.45	0.02	0%	0.27	15.47	39%
R67	14.83	0.01	0%	0.07	14.84	37%
R68	15.11	0.01	0%	0.05	15.12	38%
R69	15.49	0.01	0%	0.13	15.51	39%
R70	14.91	0.00	0%	0.01	14.92	37%
R71	14.58	0.00	0%	0.03	14.59	36%
R72	15.52	0.02	0%	0.11	15.53	39%
R73	15.53	0.01	0%	0.12	15.54	39%
R74	14.73	0.02	0%	0.08	14.74	37%
R75	14.68	0.01	0%	0.04	14.68	37%
R76	16.36	0.01	0%	0.74	16.37	41%
R77	15.61	0.01	0%	0.26	15.63	39%
R78	15.77	0.01	0%	0.15	15.78	39%
R79	16.20	0.04	0%	0.97	16.25	41%
R80	15.34	0.02	0%	0.16	15.36	38%
R81	15.31	0.02	0%	0.13	15.33	38%
R82	15.59	0.03	0%	0.36	15.62	39%
R83	15.86	0.00	0%	0.32	15.95	40%
R84	15.79	0.05	0%	0.57	15.84	40%
R85	16.16	0.05	0%	0.93	16.21	41%
R86	15.53	0.04	0%	0.30	15.58	39%
R87	15.40	0.02	0%	0.22	15.42	39%
R88	15.44	0.03	0%	0.20	15.47	39%
R89	15.38	0.01	0%	0.24	15.40	38%
R90	15.57	0.02	0%	0.39	15.59	39%
R91	15.47	0.02	0%	0.28	15.49	39%
R92	14.64	0.01	0%	0.06	14.65	37%
R93	14.63	0.01	0%	0.05	14.64	37%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R94	15.70	0.02	0%	0.37	15.72	39%
R95	15.73	0.01	0%	1.36	15.74	39%
R96	15.70	0.05	0%	0.47	15.75	39%
R97	15.35	0.02	0%	0.16	15.37	38%
R98	15.36	0.03	0%	0.18	15.39	38%
R99	15.49	0.02	0%	0.30	15.51	39%
R100	14.64	0.01	0%	0.06	14.65	37%
R101	14.64	0.01	0%	0.06	14.65	37%
R102	14.68	0.01	0%	0.04	14.68	37%
R103	15.51	0.02	0%	0.11	15.53	39%
R104	15.84	0.01	0%	0.03	15.85	40%
R105	14.57	0.01	0%	0.20	14.58	36%
R106	14.62	0.01	0%	0.25	14.63	37%
R107	15.47	0.04	0%	0.24	15.52	39%
R108	15.48	0.01	0%	0.15	15.50	39%
R109	15.36	0.02	0%	0.18	15.38	38%
R110	15.34	0.02	0%	0.16	15.36	38%
R111	15.50	0.02	0%	0.31	15.51	39%
R112	14.57	0.01	0%	0.20	14.58	36%
R113	15.56	0.02	0%	0.37	15.57	39%
R114	15.60	0.02	0%	0.42	15.62	39%
R115	15.27	0.01	0%	0.12	15.28	38%
R116	16.01	0.01	0%	0.41	16.04	40%
R117	14.66	0.01	0%	0.30	14.68	37%
R118	14.68	0.01	0%	0.32	14.69	37%
R119	15.70	0.02	0%	0.52	15.72	39%
R120	14.69	0.01	0%	0.32	14.70	37%
R121	15.46	0.02	0%	0.28	15.49	39%
R122	15.49	0.02	0%	0.30	15.51	39%
R123	15.47	0.02	0%	0.29	15.50	39%
R124	15.45	0.02	0%	0.26	15.47	39%
R125	15.41	0.03	0%	0.23	15.44	39%
R126	15.40	0.03	0%	0.22	15.43	39%
R127	15.40	0.03	0%	0.22	15.43	39%
R128	15.39	0.03	0%	0.21	15.42	39%
R129	15.35	0.03	0%	0.17	15.38	38%
R130	15.36	0.03	0%	0.17	15.38	38%
R131	15.36	0.03	0%	0.18	15.39	38%
R132	15.36	0.03	0%	0.18	15.39	38%
R133	15.36	0.03	0%	0.18	15.39	38%
R134	15.37	0.03	0%	0.18	15.39	38%
R135	15.37	0.03	0%	0.19	15.40	38%
R136	15.35	0.03	0%	0.17	15.38	38%
R137	15.35	0.03	0%	0.17	15.38	38%
R138	15.36	0.03	0%	0.17	15.38	38%
R139	15.36	0.03	0%	0.18	15.39	38%
R140	15.36	0.03	0%	0.18	15.39	38%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R141	15.36	0.03	0%	0.18	15.39	38%
R142	15.36	0.03	0%	0.18	15.39	38%
R143	15.36	0.03	0%	0.18	15.39	38%
R144	15.37	0.03	0%	0.18	15.39	38%
R145	15.44	0.02	0%	0.25	15.46	39%
R146	15.44	0.02	0%	0.26	15.47	39%
R147	15.46	0.02	0%	0.27	15.48	39%
R148	15.47	0.02	0%	0.29	15.49	39%
R149	15.50	0.02	0%	0.31	15.52	39%
R150	15.50	0.02	0%	0.32	15.53	39%
R151	15.52	0.02	0%	0.34	15.54	39%
R152	15.53	0.02	0%	0.35	15.55	39%
R153	15.51	0.02	0%	0.33	15.53	39%
R154	15.48	0.02	0%	0.29	15.50	39%
R155	15.47	0.02	0%	0.28	15.49	39%
R156	15.46	0.02	0%	0.28	15.48	39%
R157	15.45	0.02	0%	0.27	15.48	39%
R158	15.45	0.02	0%	0.27	15.48	39%
R159	15.46	0.02	0%	0.27	15.48	39%
R160	15.88	0.03	0%	0.70	15.91	40%
R161	15.86	0.03	0%	0.68	15.89	40%
R162	15.77	0.03	0%	0.59	15.79	39%
R163	15.77	0.03	0%	0.59	15.80	40%
R164	15.84	0.03	0%	0.66	15.87	40%
R165	15.77	0.03	0%	0.59	15.80	39%
R166	15.76	0.03	0%	0.58	15.79	39%
R167	15.84	0.03	0%	0.66	15.86	40%
R168	15.76	0.03	0%	0.58	15.79	39%
R169	15.74	0.03	0%	0.55	15.76	39%
R170	15.83	0.03	0%	0.65	15.86	40%
R171	15.77	0.03	0%	0.59	15.80	39%
R172	15.83	0.03	0%	0.65	15.86	40%
R173	15.81	0.03	0%	0.63	15.84	40%
R174	15.81	0.03	0%	0.63	15.84	40%
R175	15.82	0.03	0%	0.64	15.84	40%
R176	15.80	0.03	0%	0.62	15.82	40%
R177	15.79	0.03	0%	0.61	15.82	40%
R178	15.79	0.03	0%	0.61	15.82	40%
R179	15.95	0.03	0%	0.77	15.97	40%
R180	15.92	0.03	0%	0.73	15.94	40%
R181	15.93	0.03	0%	0.75	15.95	40%
R182	15.90	0.03	0%	0.72	15.93	40%
R183	15.88	0.03	0%	0.70	15.91	40%
R184	15.88	0.03	0%	0.70	15.91	40%
R185	15.88	0.03	0%	0.70	15.91	40%
R186	15.85	0.03	0%	0.67	15.88	40%
R187	15.85	0.03	0%	0.67	15.88	40%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R188	15.83	0.03	0%	0.65	15.85	40%
R189	15.84	0.03	0%	0.65	15.86	40%
R190	15.83	0.03	0%	0.65	15.86	40%
R191	15.87	0.03	0%	0.68	15.89	40%
R192	15.40	0.02	0%	0.22	15.43	39%
R193	15.40	0.02	0%	0.22	15.43	39%
R194	15.40	0.02	0%	0.22	15.43	39%
R195	15.41	0.02	0%	0.22	15.43	39%
R196	15.40	0.02	0%	0.22	15.43	39%
R197	15.41	0.02	0%	0.22	15.43	39%
R198	15.40	0.02	0%	0.22	15.43	39%
R199	15.41	0.02	0%	0.22	15.43	39%
R200	15.37	0.02	0%	0.19	15.40	38%
R201	15.38	0.02	0%	0.19	15.40	38%
R202	15.38	0.02	0%	0.20	15.40	39%
R203	15.37	0.02	0%	0.19	15.40	38%
R204	15.38	0.02	0%	0.19	15.40	38%
R205	15.38	0.02	0%	0.20	15.40	39%
R206	15.38	0.02	0%	0.20	15.41	39%
R207	15.39	0.02	0%	0.20	15.41	39%
R208	15.39	0.02	0%	0.21	15.41	39%
R209	15.38	0.02	0%	0.20	15.41	39%
R210	15.39	0.02	0%	0.21	15.41	39%
R211	15.39	0.02	0%	0.21	15.41	39%
R212	15.39	0.02	0%	0.21	15.41	39%
R213	15.39	0.02	0%	0.21	15.42	39%
R214	14.60	0.01	0%	0.23	14.61	37%
R215	14.60	0.01	0%	0.24	14.62	37%
R216	14.61	0.01	0%	0.25	14.63	37%
R217	14.62	0.01	0%	0.26	14.64	37%
R218	14.63	0.01	0%	0.27	14.65	37%
R219	14.65	0.01	0%	0.28	14.66	37%
R220	14.66	0.01	0%	0.30	14.68	37%
R221	14.63	0.01	0%	0.27	14.65	37%
R222	14.63	0.01	0%	0.26	14.64	37%
R223	14.63	0.01	0%	0.26	14.64	37%
R224	14.62	0.01	0%	0.25	14.63	37%
R225	14.68	0.01	0%	0.31	14.69	37%
R226	14.70	0.01	0%	0.33	14.71	37%
R227	14.71	0.01	0%	0.35	14.73	37%
R228	14.73	0.01	0%	0.37	14.75	37%
R229	14.73	0.01	0%	0.36	14.74	37%
R230	14.75	0.01	0%	0.38	14.76	37%
R231	14.80	0.01	0%	0.43	14.81	37%
R232	14.77	0.01	0%	0.40	14.78	37%
R233	14.77	0.01	0%	0.41	14.79	37%
R234	14.77	0.01	0%	0.40	14.78	37%

ID	Background	PC (Stack)	% PC (stack) of AQUAL	PC Traffic	PEC	%PEC of AQUAL
R235	14.77	0.01	0%	0.40	14.78	37%
R236	14.77	0.01	0%	0.40	14.78	37%
R237	14.77	0.01	0%	0.41	14.79	37%
R238	14.77	0.01	0%	0.40	14.78	37%
R239	14.78	0.01	0%	0.41	14.79	37%
R240	14.75	0.01	0%	0.39	14.77	37%
R241	14.77	0.01	0%	0.41	14.79	37%
R242	14.77	0.01	0%	0.40	14.78	37%
R243	14.76	0.01	0%	0.40	14.78	37%
R244	14.76	0.01	0%	0.39	14.77	37%
R245	14.76	0.01	0%	0.40	14.78	37%
R246	14.76	0.01	0%	0.39	14.77	37%
R247	14.77	0.01	0%	0.40	14.78	37%
R248	14.75	0.01	0%	0.38	14.76	37%
R249	14.75	0.01	0%	0.38	14.76	37%
R250	14.74	0.01	0%	0.37	14.75	37%
R251	14.78	0.01	0%	0.41	14.79	37%
R252	14.69	0.01	0%	0.33	14.71	37%
R253	15.29	0.00	0%	0.03	15.30	38%
R254	14.43	0.01	0%	0.06	14.43	36%
R255	14.43	0.01	0%	0.06	14.44	36%
R256	14.43	0.01	0%	0.06	14.44	36%
R257	14.43	0.01	0%	0.06	14.44	36%
R258	14.43	0.01	0%	0.06	14.44	36%
R259	14.43	0.01	0%	0.06	14.44	36%
R260	14.43	0.01	0%	0.06	14.44	36%
R261	14.43	0.01	0%	0.06	14.44	36%
R262	14.43	0.01	0%	0.06	14.44	36%
R263	14.42	0.01	0%	0.05	14.43	36%
R264	14.42	0.01	0%	0.05	14.43	36%
R265	14.42	0.01	0%	0.05	14.43	36%
R266	14.42	0.01	0%	0.05	14.43	36%
R267	14.42	0.01	0%	0.05	14.43	36%
R268	14.42	0.01	0%	0.05	14.43	36%
R269	14.42	0.01	0%	0.05	14.43	36%
R270	14.42	0.01	0%	0.05	14.43	36%
R271	14.42	0.01	0%	0.05	14.43	36%
R272	14.42	0.01	0%	0.05	14.43	36%
R273	14.42	0.01	0%	0.05	14.43	36%
R274	14.42	0.01	0%	0.05	14.43	36%
R275	14.42	0.01	0%	0.05	14.43	36%
R276	14.42	0.01	0%	0.05	14.43	36%
R277	14.42	0.01	0%	0.05	14.43	36%
R278	14.42	0.01	0%	0.05	14.43	36%
R279	14.42	0.01	0%	0.05	14.43	36%
R280	14.42	0.01	0%	0.05	14.43	36%
R281	14.42	0.01	0%	0.05	14.43	36%



ID	Background	PC (Stack)	% PC (stack) of AQUAL	PC Traffic	PEC	%PEC of AQUAL
R282	14.42	0.01	0%	0.05	14.43	36%
R283	14.42	0.01	0%	0.05	14.43	36%
R284	14.43	0.01	0%	0.06	14.43	36%
R285	14.43	0.01	0%	0.06	14.43	36%
R286	14.43	0.01	0%	0.06	14.43	36%
R287	14.43	0.01	0%	0.06	14.43	36%
R288	14.43	0.01	0%	0.06	14.43	36%
R289	14.43	0.01	0%	0.06	14.43	36%
R290	14.43	0.01	0%	0.06	14.43	36%
R291	14.43	0.01	0%	0.06	14.43	36%
R292	14.43	0.01	0%	0.06	14.43	36%
R293	14.43	0.01	0%	0.06	14.43	36%
R294	14.43	0.01	0%	0.06	14.43	36%
R295	15.23	0.01	0%	0.08	15.25	38%
R296	15.27	0.02	0%	0.09	15.29	38%
R297	15.30	0.02	0%	0.12	15.32	38%
R298	15.32	0.02	0%	0.14	15.34	38%
R299	15.36	0.03	0%	0.12	15.39	38%
R300	15.36	0.03	0%	0.12	15.39	38%
R301	14.63	0.01	0%	0.05	14.64	37%
R302	14.63	0.01	0%	0.05	14.64	37%
R303	15.21	0.01	0%	0.07	15.23	38%
R304	14.63	0.01	0%	0.05	14.64	37%
R305	14.50	0.02	0%	0.13	14.52	36%
R306	15.30	0.03	0%	0.12	15.33	38%
R307	15.42	0.01	0%	0.08	15.43	39%
R308	14.72	0.02	0%	0.07	14.74	37%
R309	15.30	0.02	0%	0.12	15.32	38%
R310	15.49	0.01	0%	0.04	15.50	39%
R311	15.36	0.03	0%	0.12	15.39	38%
R312	15.36	0.03	0%	0.12	15.39	38%
R313	15.36	0.03	0%	0.12	15.39	38%
R314	15.36	0.03	0%	0.12	15.39	38%
R315	15.36	0.03	0%	0.12	15.39	38%
R316	15.21	0.01	0%	0.06	15.23	38%
R317	14.63	0.01	0%	0.05	14.64	37%
R318	14.71	0.01	0%	0.07	14.73	37%
R319	15.48	0.01	0%	0.30	15.49	39%
R320	16.58	0.01	0%	0.61	16.60	41%
R321	16.51	0.01	0%	0.64	16.52	41%
R322	16.64	0.01	0%	0.29	16.65	42%
R323	16.70	0.01	0%	0.14	16.72	42%
R324	16.14	0.01	0%	0.11	16.15	40%
R325	16.08	0.01	0%	0.11	16.08	40%
R326	14.98	0.01	0%	0.13	14.99	37%
R327	15.03	0.01	0%	0.16	15.04	38%
R328	14.96	0.01	0%	0.44	14.97	37%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PC Traffic</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
R329	14.87	0.01	0%	0.65	14.88	37%
R330	16.22	0.01	0%	0.01	16.23	41%
R331	15.94	0.01	0%	0.01	15.95	40%
R332	15.60	0.01	0%	0.96	15.61	39%
R333	15.93	0.01	0%	0.89	15.94	40%
R334	15.89	0.01	0%	1.02	15.90	40%
R335	15.83	0.01	0%	1.09	15.84	40%
R336	15.42	0.01	0%	0.72	15.43	39%
R337	15.56	0.01	0%	0.45	15.57	39%
R338	15.92	0.01	0%	0.29	15.94	40%

**Table 8B.H5 Modelled Daily Mean PM<sub>10</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R1	28.75	0.01	0%	0.00	28.77	58%
R2	31.59	0.00	0%	0.01	31.62	63%
R3	32.26	0.01	0%	0.00	32.28	65%
R4	33.68	0.04	0%	0.01	33.74	67%
R5	32.67	0.15	0%	0.01	32.83	66%
R6	32.29	0.04	0%	0.04	32.41	65%
R7	31.90	0.06	0%	0.01	31.98	64%
R8	31.23	0.02	0%	0.00	31.25	62%
R9	32.09	0.03	0%	0.00	32.12	64%
R10	30.89	0.03	0%	0.00	30.92	62%
R11	32.11	0.05	0%	0.00	32.16	64%
R12	28.85	0.02	0%	0.00	28.87	58%
R13	30.79	0.02	0%	0.00	30.81	62%
R14	28.66	0.02	0%	0.00	28.67	57%
R15	30.95	0.01	0%	0.00	30.97	62%
R16	32.94	0.08	0%	0.00	33.02	66%
R17	30.75	0.11	0%	0.00	30.86	62%
R18	30.95	0.10	0%	0.00	31.05	62%
R19	32.64	0.10	0%	0.00	32.75	65%
R20	32.62	0.11	0%	0.00	32.74	65%
R21	32.03	0.11	0%	0.00	32.15	64%
R22	31.11	0.09	0%	0.00	31.21	62%
R23	32.82	0.09	0%	0.00	32.92	66%
R24	32.94	0.09	0%	0.00	33.03	66%
R26	32.32	0.09	0%	0.00	32.41	65%
R27	32.21	0.10	0%	0.00	32.31	65%
R28	30.78	0.08	0%	0.00	30.86	62%
R29	30.81	0.11	0%	0.00	30.92	62%
R30	34.11	0.05	0%	0.01	34.17	68%
R31	33.43	0.05	0%	0.01	33.49	67%
R32	33.51	0.05	0%	0.01	33.57	67%
R33	33.98	0.05	0%	0.00	34.04	68%
R34	33.30	0.06	0%	0.00	33.36	67%
R35	32.94	0.06	0%	0.00	33.01	66%
R36	33.08	0.06	0%	0.00	33.15	66%
R37	32.63	0.07	0%	0.00	32.70	65%
R38	32.57	0.07	0%	0.00	32.65	65%
R39	32.05	0.08	0%	0.00	32.14	64%
R40	31.60	0.08	0%	0.00	31.69	63%
R41	33.25	0.08	0%	0.00	33.34	67%
R42	32.40	0.08	0%	0.00	32.48	65%
R43	32.37	0.09	0%	0.00	32.46	65%
R44	31.25	0.09	0%	0.00	31.34	63%
R45	31.12	0.08	0%	0.00	31.20	62%
R46	30.72	0.09	0%	0.00	30.81	62%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R47	32.66	0.08	0%	0.00	32.75	65%
R48	31.23	0.08	0%	0.00	31.31	63%
R49	31.86	0.07	0%	0.00	31.93	64%
R50	32.28	0.06	0%	0.00	32.34	65%
R51	32.87	0.05	0%	0.00	32.92	66%
R52	32.32	0.04	0%	0.00	32.36	65%
R53	34.41	0.04	0%	0.01	34.47	69%
R54	32.34	0.04	0%	0.01	32.39	65%
R55	30.79	0.06	0%	0.00	30.85	62%
R56	30.81	0.09	0%	0.00	30.90	62%
R57	30.74	0.11	0%	0.00	30.85	62%
R58	30.71	0.12	0%	0.00	30.83	62%
R59	30.97	0.09	0%	0.00	31.06	62%
R60	29.04	0.03	0%	0.00	29.07	58%
R61	30.60	0.09	0%	0.00	30.70	61%
R62	30.63	0.10	0%	0.00	30.73	61%
R63	30.61	0.07	0%	0.00	30.68	61%
R64	30.64	0.07	0%	0.00	30.72	61%
R65	31.70	0.08	0%	0.00	31.78	64%
R66	30.90	0.05	0%	0.00	30.95	62%
R67	29.67	0.03	0%	0.00	29.70	59%
R68	30.23	0.02	0%	0.00	30.25	61%
R69	30.99	0.03	0%	0.00	31.03	62%
R70	29.83	0.01	0%	0.00	29.83	60%
R71	29.17	0.01	0%	0.00	29.18	58%
R72	31.03	0.06	0%	0.00	31.09	62%
R73	31.06	0.05	0%	0.00	31.11	62%
R74	29.45	0.05	0%	0.00	29.50	59%
R75	29.35	0.02	0%	0.00	29.37	59%
R76	32.72	0.04	0%	0.00	32.77	66%
R77	31.23	0.02	0%	0.01	31.27	63%
R78	31.54	0.04	0%	0.00	31.58	63%
R79	32.40	0.16	0%	0.00	32.56	65%
R80	30.68	0.07	0%	0.00	30.75	61%
R81	30.62	0.07	0%	0.00	30.69	61%
R82	31.18	0.09	0%	0.00	31.27	63%
R83	31.72	0.00	0%	0.08	31.89	64%
R84	31.59	0.16	0%	0.01	31.76	64%
R85	32.32	0.16	0%	0.00	32.50	65%
R86	31.06	0.15	0%	0.00	31.22	62%
R87	30.80	0.07	0%	0.00	30.87	62%
R88	30.87	0.10	0%	0.00	30.98	62%
R89	30.77	0.04	0%	0.00	30.81	62%
R90	31.14	0.08	0%	0.00	31.21	62%
R91	30.93	0.07	0%	0.00	31.01	62%
R92	29.28	0.04	0%	0.00	29.32	59%
R93	29.26	0.04	0%	0.00	29.30	59%

ID	Background PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R94	31.41	0.06	0%	0.00	31.47 63%
R95	31.45	0.04	0%	0.01	31.50 63%
R96	31.40	0.16	0%	0.00	31.57 63%
R97	30.69	0.07	0%	0.00	30.76 62%
R98	30.71	0.09	0%	0.00	30.81 62%
R99	30.97	0.08	0%	0.00	31.05 62%
R100	29.27	0.04	0%	0.00	29.31 59%
R101	29.28	0.04	0%	0.00	29.32 59%
R102	29.35	0.02	0%	0.00	29.37 59%
R103	31.03	0.06	0%	0.00	31.09 62%
R104	31.68	0.02	0%	0.00	31.70 63%
R105	29.14	0.03	0%	0.00	29.17 58%
R106	29.23	0.04	0%	0.00	29.28 59%
R107	30.94	0.15	0%	0.00	31.10 62%
R108	30.96	0.04	0%	0.00	31.01 62%
R109	30.72	0.06	0%	0.00	30.78 62%
R110	30.67	0.06	0%	0.00	30.73 61%
R111	30.99	0.05	0%	0.00	31.05 62%
R112	29.13	0.04	0%	0.00	29.17 58%
R113	31.11	0.06	0%	0.00	31.17 62%
R114	31.19	0.06	0%	0.00	31.25 63%
R115	30.53	0.04	0%	0.00	30.57 61%
R116	32.02	0.02	0%	0.02	32.08 64%
R117	29.33	0.04	0%	0.00	29.37 59%
R118	29.36	0.04	0%	0.00	29.41 59%
R119	31.40	0.06	0%	0.00	31.46 63%
R120	29.37	0.04	0%	0.00	29.42 59%
R121	30.92	0.07	0%	0.00	31.00 62%
R122	30.97	0.08	0%	0.00	31.05 62%
R123	30.94	0.07	0%	0.00	31.02 62%
R124	30.89	0.07	0%	0.00	30.97 62%
R125	30.82	0.09	0%	0.00	30.91 62%
R126	30.81	0.09	0%	0.00	30.89 62%
R127	30.80	0.09	0%	0.00	30.89 62%
R128	30.79	0.09	0%	0.00	30.88 62%
R129	30.71	0.09	0%	0.00	30.80 62%
R130	30.71	0.09	0%	0.00	30.80 62%
R131	30.72	0.09	0%	0.00	30.81 62%
R132	30.72	0.09	0%	0.00	30.81 62%
R133	30.73	0.09	0%	0.00	30.82 62%
R134	30.73	0.09	0%	0.00	30.82 62%
R135	30.74	0.09	0%	0.00	30.83 62%
R136	30.71	0.09	0%	0.00	30.80 62%
R137	30.71	0.09	0%	0.00	30.80 62%
R138	30.71	0.09	0%	0.00	30.80 62%
R139	30.72	0.09	0%	0.00	30.81 62%
R140	30.72	0.09	0%	0.00	30.81 62%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R141	30.72	0.09	0%	0.00	30.81	62%
R142	30.72	0.09	0%	0.00	30.81	62%
R143	30.73	0.09	0%	0.00	30.82	62%
R144	30.73	0.09	0%	0.00	30.82	62%
R145	30.87	0.07	0%	0.00	30.95	62%
R146	30.89	0.07	0%	0.00	30.96	62%
R147	30.91	0.07	0%	0.00	30.99	62%
R148	30.94	0.07	0%	0.00	31.01	62%
R149	30.99	0.08	0%	0.00	31.07	62%
R150	31.01	0.08	0%	0.00	31.08	62%
R151	31.03	0.08	0%	0.00	31.11	62%
R152	31.06	0.08	0%	0.00	31.14	62%
R153	31.02	0.08	0%	0.00	31.10	62%
R154	30.95	0.07	0%	0.00	31.03	62%
R155	30.93	0.07	0%	0.00	31.01	62%
R156	30.92	0.07	0%	0.00	30.99	62%
R157	30.91	0.07	0%	0.00	30.98	62%
R158	30.90	0.07	0%	0.00	30.98	62%
R159	30.91	0.07	0%	0.00	30.99	62%
R160	31.76	0.08	0%	0.00	31.84	64%
R161	31.73	0.08	0%	0.00	31.81	64%
R162	31.53	0.08	0%	0.00	31.62	63%
R163	31.55	0.08	0%	0.00	31.63	63%
R164	31.68	0.08	0%	0.00	31.76	64%
R165	31.54	0.08	0%	0.00	31.63	63%
R166	31.53	0.08	0%	0.00	31.61	63%
R167	31.67	0.08	0%	0.00	31.76	64%
R168	31.52	0.08	0%	0.00	31.61	63%
R169	31.47	0.08	0%	0.00	31.56	63%
R170	31.67	0.08	0%	0.00	31.75	64%
R171	31.54	0.08	0%	0.00	31.62	63%
R172	31.66	0.08	0%	0.00	31.74	63%
R173	31.62	0.08	0%	0.00	31.71	63%
R174	31.62	0.08	0%	0.00	31.71	63%
R175	31.64	0.08	0%	0.00	31.72	63%
R176	31.59	0.08	0%	0.00	31.68	63%
R177	31.59	0.08	0%	0.00	31.67	63%
R178	31.58	0.08	0%	0.00	31.67	63%
R179	31.89	0.08	0%	0.00	31.98	64%
R180	31.83	0.08	0%	0.00	31.92	64%
R181	31.86	0.08	0%	0.00	31.94	64%
R182	31.80	0.08	0%	0.00	31.88	64%
R183	31.77	0.08	0%	0.00	31.85	64%
R184	31.76	0.08	0%	0.00	31.85	64%
R185	31.76	0.08	0%	0.00	31.84	64%
R186	31.71	0.08	0%	0.00	31.79	64%
R187	31.70	0.08	0%	0.00	31.79	64%

ID	Background PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R188	31.65	0.08	0%	0.00	31.74 63%
R189	31.67	0.08	0%	0.00	31.76 64%
R190	31.67	0.08	0%	0.00	31.75 64%
R191	31.73	0.08	0%	0.00	31.82 64%
R192	30.80	0.07	0%	0.00	30.88 62%
R193	30.81	0.07	0%	0.00	30.88 62%
R194	30.81	0.07	0%	0.00	30.88 62%
R195	30.81	0.07	0%	0.00	30.89 62%
R196	30.81	0.07	0%	0.00	30.88 62%
R197	30.81	0.07	0%	0.00	30.89 62%
R198	30.81	0.07	0%	0.00	30.88 62%
R199	30.81	0.07	0%	0.00	30.89 62%
R200	30.75	0.07	0%	0.00	30.82 62%
R201	30.75	0.07	0%	0.00	30.83 62%
R202	30.76	0.07	0%	0.00	30.83 62%
R203	30.75	0.07	0%	0.00	30.82 62%
R204	30.75	0.07	0%	0.00	30.83 62%
R205	30.76	0.07	0%	0.00	30.84 62%
R206	30.77	0.07	0%	0.00	30.84 62%
R207	30.77	0.07	0%	0.00	30.84 62%
R208	30.78	0.07	0%	0.00	30.85 62%
R209	30.77	0.07	0%	0.00	30.84 62%
R210	30.78	0.07	0%	0.00	30.86 62%
R211	30.78	0.07	0%	0.00	30.85 62%
R212	30.78	0.07	0%	0.00	30.86 62%
R213	30.79	0.07	0%	0.00	30.86 62%
R214	29.20	0.04	0%	0.00	29.24 58%
R215	29.21	0.04	0%	0.00	29.25 59%
R216	29.23	0.04	0%	0.00	29.27 59%
R217	29.25	0.04	0%	0.00	29.29 59%
R218	29.27	0.04	0%	0.00	29.31 59%
R219	29.29	0.04	0%	0.00	29.34 59%
R220	29.32	0.04	0%	0.00	29.37 59%
R221	29.27	0.04	0%	0.00	29.31 59%
R222	29.26	0.04	0%	0.00	29.31 59%
R223	29.26	0.04	0%	0.00	29.31 59%
R224	29.24	0.04	0%	0.00	29.29 59%
R225	29.36	0.04	0%	0.00	29.40 59%
R226	29.39	0.04	0%	0.00	29.43 59%
R227	29.42	0.04	0%	0.00	29.47 59%
R228	29.47	0.04	0%	0.00	29.51 59%
R229	29.45	0.04	0%	0.00	29.50 59%
R230	29.50	0.04	0%	0.00	29.55 59%
R231	29.59	0.04	0%	0.00	29.64 59%
R232	29.54	0.04	0%	0.00	29.59 59%
R233	29.55	0.04	0%	0.00	29.59 59%
R234	29.53	0.04	0%	0.00	29.58 59%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R235	29.53	0.04	0%	0.00	29.58	59%
R236	29.54	0.04	0%	0.00	29.58	59%
R237	29.55	0.04	0%	0.00	29.59	59%
R238	29.54	0.04	0%	0.00	29.58	59%
R239	29.56	0.04	0%	0.00	29.61	59%
R240	29.51	0.04	0%	0.00	29.55	59%
R241	29.55	0.04	0%	0.00	29.59	59%
R242	29.53	0.04	0%	0.00	29.58	59%
R243	29.53	0.04	0%	0.00	29.57	59%
R244	29.52	0.04	0%	0.00	29.56	59%
R245	29.53	0.04	0%	0.00	29.57	59%
R246	29.52	0.04	0%	0.00	29.56	59%
R247	29.54	0.04	0%	0.00	29.58	59%
R248	29.50	0.04	0%	0.00	29.54	59%
R249	29.50	0.04	0%	0.00	29.55	59%
R250	29.48	0.04	0%	0.00	29.53	59%
R251	29.55	0.04	0%	0.00	29.60	59%
R252	29.39	0.04	0%	0.00	29.43	59%
R253	30.59	0.01	0%	0.00	30.60	61%
R254	28.85	0.02	0%	0.00	28.88	58%
R255	28.86	0.02	0%	0.00	28.88	58%
R256	28.86	0.02	0%	0.00	28.88	58%
R257	28.86	0.02	0%	0.00	28.88	58%
R258	28.86	0.02	0%	0.00	28.88	58%
R259	28.86	0.02	0%	0.00	28.88	58%
R260	28.86	0.02	0%	0.00	28.88	58%
R261	28.86	0.02	0%	0.00	28.88	58%
R262	28.86	0.02	0%	0.00	28.88	58%
R263	28.84	0.02	0%	0.00	28.87	58%
R264	28.84	0.02	0%	0.00	28.87	58%
R265	28.84	0.02	0%	0.00	28.87	58%
R266	28.84	0.02	0%	0.00	28.87	58%
R267	28.84	0.02	0%	0.00	28.87	58%
R268	28.84	0.02	0%	0.00	28.87	58%
R269	28.84	0.02	0%	0.00	28.87	58%
R270	28.84	0.02	0%	0.00	28.87	58%
R271	28.84	0.02	0%	0.00	28.87	58%
R272	28.84	0.02	0%	0.00	28.87	58%
R273	28.84	0.02	0%	0.00	28.87	58%
R274	28.84	0.02	0%	0.00	28.87	58%
R275	28.84	0.02	0%	0.00	28.87	58%
R276	28.84	0.02	0%	0.00	28.87	58%
R277	28.84	0.02	0%	0.00	28.87	58%
R278	28.84	0.02	0%	0.00	28.87	58%
R279	28.84	0.02	0%	0.00	28.87	58%
R280	28.84	0.02	0%	0.00	28.87	58%
R281	28.84	0.02	0%	0.00	28.87	58%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R282	28.84	0.02	0%	0.00	28.87	58%
R283	28.84	0.02	0%	0.00	28.87	58%
R284	28.85	0.02	0%	0.00	28.88	58%
R285	28.85	0.02	0%	0.00	28.88	58%
R286	28.85	0.02	0%	0.00	28.88	58%
R287	28.85	0.02	0%	0.00	28.88	58%
R288	28.85	0.02	0%	0.00	28.88	58%
R289	28.85	0.02	0%	0.00	28.88	58%
R290	28.85	0.02	0%	0.00	28.88	58%
R291	28.85	0.02	0%	0.00	28.88	58%
R292	28.85	0.02	0%	0.00	28.88	58%
R293	28.85	0.02	0%	0.00	28.88	58%
R294	28.85	0.02	0%	0.00	28.88	58%
R295	30.46	0.05	0%	0.00	30.51	61%
R296	30.54	0.06	0%	0.00	30.60	61%
R297	30.61	0.07	0%	0.00	30.68	61%
R298	30.64	0.07	0%	0.00	30.71	61%
R299	30.71	0.11	0%	0.00	30.82	62%
R300	30.71	0.11	0%	0.00	30.83	62%
R301	29.25	0.04	0%	0.00	29.29	59%
R302	29.26	0.04	0%	0.00	29.30	59%
R303	30.43	0.04	0%	0.00	30.47	61%
R304	29.25	0.04	0%	0.00	29.29	59%
R305	29.00	0.06	0%	0.00	29.06	58%
R306	30.61	0.09	0%	0.00	30.70	61%
R307	30.84	0.02	0%	0.00	30.86	62%
R308	29.44	0.05	0%	0.00	29.49	59%
R309	30.60	0.06	0%	0.00	30.67	61%
R310	30.99	0.03	0%	0.00	31.02	62%
R311	30.71	0.11	0%	0.00	30.83	62%
R312	30.71	0.11	0%	0.00	30.83	62%
R313	30.71	0.11	0%	0.00	30.83	62%
R314	30.71	0.11	0%	0.00	30.83	62%
R315	30.71	0.11	0%	0.00	30.83	62%
R316	30.42	0.05	0%	0.00	30.47	61%
R317	29.25	0.04	0%	0.00	29.29	59%
R318	29.43	0.05	0%	0.00	29.48	59%
R319	30.95	0.04	0%	0.00	31.00	62%
R320	33.17	0.04	0%	0.00	33.22	66%
R321	33.01	0.03	0%	0.00	33.06	66%
R322	33.27	0.03	0%	0.00	33.32	67%
R323	33.41	0.03	0%	0.00	33.46	67%
R324	32.28	0.02	0%	0.00	32.32	65%
R325	32.15	0.03	0%	0.00	32.19	64%
R326	29.96	0.03	0%	0.00	29.99	60%
R327	30.06	0.03	0%	0.00	30.09	60%
R328	29.92	0.03	0%	0.01	29.95	60%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R329	29.74	0.02	0%	0.02	29.77	60%
R330	32.44	0.02	0%	0.00	32.48	65%
R331	31.88	0.03	0%	0.00	31.93	64%
R332	31.20	0.03	0%	0.00	31.24	62%
R333	31.85	0.02	0%	0.01	31.89	64%
R334	31.79	0.02	0%	0.00	31.82	64%
R335	31.66	0.02	0%	0.01	31.69	63%
R336	30.85	0.03	0%	0.00	30.88	62%
R337	31.12	0.03	0%	0.00	31.15	62%
R338	31.85	0.03	0%	0.00	31.89	64%

**Table 8B.H6 Modelled Annual Mean PM<sub>2.5</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R1	8.86	0.01	0%	0.06	8.86	44%
R2	9.44	0.00	0%	0.11	9.45	47%
R3	9.63	0.01	0%	0.30	9.64	48%
R4	10.04	0.01	0%	0.71	10.06	50%
R5	9.75	0.04	0%	0.42	9.79	49%
R6	9.66	0.02	0%	0.48	9.70	48%
R7	9.55	0.02	0%	0.35	9.58	48%
R8	9.97	0.01	0%	0.16	9.97	50%
R9	10.23	0.01	0%	0.43	10.24	51%
R10	9.87	0.01	0%	0.06	9.88	49%
R11	10.22	0.01	0%	0.42	10.24	51%
R12	9.18	0.01	0%	0.03	9.19	46%
R13	9.84	0.01	0%	0.03	9.84	49%
R14	8.83	0.01	0%	0.03	8.83	44%
R15	9.27	0.01	0%	0.07	9.28	46%
R16	9.60	0.02	0%	0.07	9.62	48%
R17	9.78	0.03	0%	0.08	9.81	49%
R18	9.84	0.03	0%	0.14	9.87	49%
R19	10.35	0.03	0%	0.65	10.38	52%
R20	10.33	0.03	0%	0.63	10.36	52%
R21	10.16	0.03	0%	0.46	10.19	51%
R22	9.89	0.03	0%	0.19	9.92	50%
R23	10.39	0.03	0%	0.69	10.42	52%
R24	10.42	0.02	0%	0.73	10.45	52%
R26	10.25	0.02	0%	0.55	10.28	51%
R27	10.21	0.03	0%	0.52	10.24	51%
R28	9.79	0.02	0%	0.09	9.81	49%
R29	9.80	0.03	0%	0.10	9.83	49%
R30	10.23	0.01	0%	0.85	10.24	51%
R31	10.03	0.01	0%	0.66	10.05	50%
R32	10.05	0.01	0%	0.68	10.07	50%
R33	10.17	0.01	0%	0.80	10.19	51%
R34	9.71	0.02	0%	0.18	9.73	49%
R35	10.42	0.02	0%	0.72	10.44	52%
R36	10.46	0.02	0%	0.76	10.48	52%
R37	10.34	0.02	0%	0.64	10.36	52%
R38	10.34	0.02	0%	0.64	10.36	52%
R39	10.18	0.02	0%	0.48	10.20	51%
R40	10.03	0.03	0%	0.33	10.06	50%
R41	10.55	0.02	0%	0.85	10.57	53%
R42	10.26	0.03	0%	0.56	10.29	51%
R43	10.25	0.03	0%	0.55	10.28	51%
R44	9.93	0.03	0%	0.23	9.95	50%
R45	10.15	0.02	0%	0.22	10.17	51%
R46	10.03	0.03	0%	0.10	10.06	50%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R47	10.63	0.03	0%	0.70	10.65	53%
R48	10.19	0.02	0%	0.26	10.21	51%
R49	10.38	0.02	0%	0.45	10.40	52%
R50	10.48	0.02	0%	0.56	10.50	52%
R51	10.65	0.02	0%	0.73	10.67	53%
R52	10.49	0.01	0%	0.57	10.51	53%
R53	11.10	0.01	0%	1.18	11.12	56%
R54	10.19	0.01	0%	1.05	10.21	51%
R55	10.05	0.02	0%	0.13	10.07	50%
R56	10.06	0.03	0%	0.13	10.09	50%
R57	9.78	0.04	0%	0.08	9.82	49%
R58	9.77	0.04	0%	0.07	9.81	49%
R59	9.89	0.03	0%	0.09	9.92	50%
R60	9.23	0.01	0%	0.09	9.24	46%
R61	9.99	0.03	0%	0.07	10.02	50%
R62	10.00	0.03	0%	0.08	10.03	50%
R63	10.00	0.02	0%	0.07	10.02	50%
R64	10.01	0.02	0%	0.08	10.03	50%
R65	10.32	0.02	0%	0.39	10.34	52%
R66	10.08	0.02	0%	0.16	10.10	50%
R67	9.03	0.01	0%	0.04	9.04	45%
R68	9.00	0.01	0%	0.03	9.01	45%
R69	9.28	0.01	0%	0.08	9.29	46%
R70	8.91	0.00	0%	0.01	8.91	45%
R71	8.78	0.00	0%	0.02	8.78	44%
R72	9.43	0.02	0%	0.06	9.44	47%
R73	9.44	0.01	0%	0.07	9.45	47%
R74	9.45	0.02	0%	0.05	9.47	47%
R75	9.35	0.01	0%	0.03	9.36	47%
R76	9.82	0.01	0%	0.44	9.83	49%
R77	9.35	0.01	0%	0.15	9.36	47%
R78	9.42	0.01	0%	0.09	9.43	47%
R79	10.29	0.04	0%	0.59	10.33	52%
R80	10.02	0.02	0%	0.09	10.04	50%
R81	10.00	0.02	0%	0.08	10.02	50%
R82	9.91	0.03	0%	0.21	9.94	50%
R83	9.47	0.00	0%	0.19	9.52	48%
R84	10.03	0.05	0%	0.34	10.08	50%
R85	10.26	0.05	0%	0.57	10.31	52%
R86	9.87	0.04	0%	0.18	9.92	50%
R87	10.05	0.02	0%	0.13	10.07	50%
R88	9.82	0.03	0%	0.12	9.85	49%
R89	9.96	0.01	0%	0.14	9.98	50%
R90	10.16	0.02	0%	0.23	10.18	51%
R91	10.09	0.02	0%	0.17	10.12	51%
R92	9.54	0.01	0%	0.03	9.55	48%
R93	9.53	0.01	0%	0.03	9.55	48%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R94	10.02	0.02	0%	0.22	10.04	50%
R95	9.94	0.01	0%	0.79	9.95	50%
R96	9.97	0.05	0%	0.28	10.02	50%
R97	10.02	0.02	0%	0.10	10.04	50%
R98	10.03	0.03	0%	0.10	10.06	50%
R99	10.11	0.02	0%	0.18	10.13	51%
R100	9.54	0.01	0%	0.03	9.55	48%
R101	9.54	0.01	0%	0.03	9.55	48%
R102	9.35	0.01	0%	0.03	9.36	47%
R103	9.43	0.02	0%	0.06	9.44	47%
R104	9.49	0.01	0%	0.02	9.49	47%
R105	9.26	0.01	0%	0.12	9.27	46%
R106	9.29	0.01	0%	0.14	9.30	47%
R107	9.84	0.04	0%	0.14	9.89	49%
R108	9.89	0.01	0%	0.09	9.90	50%
R109	10.03	0.02	0%	0.11	10.05	50%
R110	10.02	0.02	0%	0.09	10.03	50%
R111	10.11	0.02	0%	0.18	10.13	51%
R112	9.26	0.01	0%	0.12	9.27	46%
R113	10.14	0.02	0%	0.22	10.16	51%
R114	10.17	0.02	0%	0.24	10.19	51%
R115	9.89	0.01	0%	0.07	9.90	50%
R116	9.56	0.01	0%	0.24	9.58	48%
R117	9.32	0.01	0%	0.17	9.33	47%
R118	9.33	0.01	0%	0.18	9.34	47%
R119	10.23	0.02	0%	0.30	10.25	51%
R120	9.33	0.01	0%	0.19	9.34	47%
R121	10.09	0.02	0%	0.17	10.12	51%
R122	10.11	0.02	0%	0.18	10.13	51%
R123	10.10	0.02	0%	0.17	10.12	51%
R124	10.08	0.02	0%	0.16	10.11	51%
R125	10.06	0.03	0%	0.14	10.09	50%
R126	10.06	0.03	0%	0.13	10.08	50%
R127	10.05	0.03	0%	0.13	10.08	50%
R128	10.05	0.03	0%	0.13	10.08	50%
R129	10.03	0.03	0%	0.10	10.05	50%
R130	10.03	0.03	0%	0.10	10.06	50%
R131	10.03	0.03	0%	0.11	10.06	50%
R132	10.03	0.03	0%	0.11	10.06	50%
R133	10.03	0.03	0%	0.11	10.06	50%
R134	10.03	0.03	0%	0.11	10.06	50%
R135	10.04	0.03	0%	0.11	10.06	50%
R136	10.03	0.03	0%	0.10	10.05	50%
R137	10.03	0.03	0%	0.10	10.05	50%
R138	10.03	0.03	0%	0.10	10.06	50%
R139	10.03	0.03	0%	0.10	10.06	50%
R140	10.03	0.03	0%	0.11	10.06	50%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R141	10.03	0.03	0%	0.11	10.06	50%
R142	10.03	0.03	0%	0.11	10.06	50%
R143	10.03	0.03	0%	0.11	10.06	50%
R144	10.03	0.03	0%	0.11	10.06	50%
R145	10.08	0.02	0%	0.15	10.10	50%
R146	10.08	0.02	0%	0.16	10.10	51%
R147	10.09	0.02	0%	0.16	10.11	51%
R148	10.10	0.02	0%	0.17	10.12	51%
R149	10.11	0.02	0%	0.19	10.14	51%
R150	10.12	0.02	0%	0.19	10.14	51%
R151	10.13	0.02	0%	0.20	10.15	51%
R152	10.13	0.02	0%	0.21	10.16	51%
R153	10.12	0.02	0%	0.20	10.14	51%
R154	10.10	0.02	0%	0.18	10.12	51%
R155	10.09	0.02	0%	0.17	10.12	51%
R156	10.09	0.02	0%	0.16	10.11	51%
R157	10.09	0.02	0%	0.16	10.11	51%
R158	10.09	0.02	0%	0.16	10.11	51%
R159	10.09	0.02	0%	0.16	10.11	51%
R160	10.35	0.03	0%	0.42	10.37	52%
R161	10.34	0.03	0%	0.41	10.36	52%
R162	10.28	0.03	0%	0.35	10.30	52%
R163	10.28	0.03	0%	0.36	10.31	52%
R164	10.32	0.03	0%	0.40	10.35	52%
R165	10.28	0.03	0%	0.36	10.31	52%
R166	10.28	0.03	0%	0.35	10.30	52%
R167	10.32	0.03	0%	0.40	10.35	52%
R168	10.27	0.03	0%	0.35	10.30	52%
R169	10.26	0.03	0%	0.33	10.28	51%
R170	10.32	0.03	0%	0.40	10.35	52%
R171	10.28	0.03	0%	0.36	10.31	52%
R172	10.32	0.03	0%	0.39	10.34	52%
R173	10.31	0.03	0%	0.38	10.33	52%
R174	10.30	0.03	0%	0.38	10.33	52%
R175	10.31	0.03	0%	0.39	10.34	52%
R176	10.30	0.03	0%	0.37	10.32	52%
R177	10.29	0.03	0%	0.37	10.32	52%
R178	10.29	0.03	0%	0.37	10.32	52%
R179	10.39	0.03	0%	0.47	10.42	52%
R180	10.37	0.03	0%	0.45	10.40	52%
R181	10.38	0.03	0%	0.45	10.40	52%
R182	10.36	0.03	0%	0.44	10.39	52%
R183	10.35	0.03	0%	0.43	10.38	52%
R184	10.35	0.03	0%	0.42	10.38	52%
R185	10.35	0.03	0%	0.42	10.37	52%
R186	10.33	0.03	0%	0.41	10.36	52%
R187	10.33	0.03	0%	0.40	10.36	52%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R188	10.31	0.03	0%	0.39	10.34	52%
R189	10.32	0.03	0%	0.40	10.35	52%
R190	10.32	0.03	0%	0.39	10.34	52%
R191	10.34	0.03	0%	0.42	10.37	52%
R192	10.05	0.02	0%	0.13	10.08	50%
R193	10.06	0.02	0%	0.13	10.08	50%
R194	10.06	0.02	0%	0.13	10.08	50%
R195	10.06	0.02	0%	0.13	10.08	50%
R196	10.06	0.02	0%	0.13	10.08	50%
R197	10.06	0.02	0%	0.13	10.08	50%
R198	10.06	0.02	0%	0.13	10.08	50%
R199	10.06	0.02	0%	0.13	10.08	50%
R200	10.04	0.02	0%	0.11	10.06	50%
R201	10.04	0.02	0%	0.11	10.06	50%
R202	10.04	0.02	0%	0.12	10.06	50%
R203	10.04	0.02	0%	0.11	10.06	50%
R204	10.04	0.02	0%	0.11	10.06	50%
R205	10.04	0.02	0%	0.12	10.07	50%
R206	10.04	0.02	0%	0.12	10.07	50%
R207	10.04	0.02	0%	0.12	10.07	50%
R208	10.05	0.02	0%	0.12	10.07	50%
R209	10.04	0.02	0%	0.12	10.07	50%
R210	10.05	0.02	0%	0.12	10.07	50%
R211	10.05	0.02	0%	0.12	10.07	50%
R212	10.05	0.02	0%	0.12	10.07	50%
R213	10.05	0.02	0%	0.13	10.07	50%
R214	9.28	0.01	0%	0.14	9.29	46%
R215	9.28	0.01	0%	0.14	9.30	46%
R216	9.29	0.01	0%	0.14	9.30	47%
R217	9.30	0.01	0%	0.15	9.31	47%
R218	9.30	0.01	0%	0.16	9.31	47%
R219	9.31	0.01	0%	0.16	9.32	47%
R220	9.32	0.01	0%	0.17	9.33	47%
R221	9.30	0.01	0%	0.16	9.32	47%
R222	9.30	0.01	0%	0.15	9.31	47%
R223	9.30	0.01	0%	0.15	9.31	47%
R224	9.29	0.01	0%	0.15	9.31	47%
R225	9.33	0.01	0%	0.18	9.34	47%
R226	9.34	0.01	0%	0.19	9.35	47%
R227	9.35	0.01	0%	0.20	9.36	47%
R228	9.36	0.01	0%	0.21	9.37	47%
R229	9.35	0.01	0%	0.21	9.37	47%
R230	9.37	0.01	0%	0.22	9.38	47%
R231	9.40	0.01	0%	0.25	9.41	47%
R232	9.38	0.01	0%	0.24	9.39	47%
R233	9.38	0.01	0%	0.24	9.40	47%
R234	9.38	0.01	0%	0.23	9.39	47%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R235	9.38	0.01	0%	0.23	9.39	47%
R236	9.38	0.01	0%	0.23	9.39	47%
R237	9.38	0.01	0%	0.24	9.40	47%
R238	9.38	0.01	0%	0.23	9.39	47%
R239	9.39	0.01	0%	0.24	9.40	47%
R240	9.37	0.01	0%	0.23	9.38	47%
R241	9.38	0.01	0%	0.24	9.40	47%
R242	9.38	0.01	0%	0.23	9.39	47%
R243	9.38	0.01	0%	0.23	9.39	47%
R244	9.37	0.01	0%	0.23	9.39	47%
R245	9.38	0.01	0%	0.23	9.39	47%
R246	9.37	0.01	0%	0.23	9.39	47%
R247	9.38	0.01	0%	0.23	9.39	47%
R248	9.37	0.01	0%	0.22	9.38	47%
R249	9.37	0.01	0%	0.22	9.38	47%
R250	9.36	0.01	0%	0.22	9.38	47%
R251	9.38	0.01	0%	0.24	9.40	47%
R252	9.34	0.01	0%	0.19	9.35	47%
R253	9.06	0.00	0%	0.02	9.06	45%
R254	9.18	0.01	0%	0.03	9.19	46%
R255	9.18	0.01	0%	0.04	9.19	46%
R256	9.18	0.01	0%	0.04	9.19	46%
R257	9.18	0.01	0%	0.04	9.19	46%
R258	9.18	0.01	0%	0.04	9.19	46%
R259	9.18	0.01	0%	0.04	9.19	46%
R260	9.18	0.01	0%	0.04	9.19	46%
R261	9.18	0.01	0%	0.04	9.19	46%
R262	9.18	0.01	0%	0.04	9.19	46%
R263	9.18	0.01	0%	0.03	9.19	46%
R264	9.18	0.01	0%	0.03	9.19	46%
R265	9.18	0.01	0%	0.03	9.19	46%
R266	9.18	0.01	0%	0.03	9.19	46%
R267	9.18	0.01	0%	0.03	9.19	46%
R268	9.18	0.01	0%	0.03	9.19	46%
R269	9.18	0.01	0%	0.03	9.19	46%
R270	9.18	0.01	0%	0.03	9.19	46%
R271	9.18	0.01	0%	0.03	9.19	46%
R272	9.18	0.01	0%	0.03	9.19	46%
R273	9.18	0.01	0%	0.03	9.19	46%
R274	9.18	0.01	0%	0.03	9.19	46%
R275	9.18	0.01	0%	0.03	9.19	46%
R276	9.18	0.01	0%	0.03	9.19	46%
R277	9.18	0.01	0%	0.03	9.19	46%
R278	9.18	0.01	0%	0.03	9.19	46%
R279	9.18	0.01	0%	0.03	9.19	46%
R280	9.18	0.01	0%	0.03	9.19	46%
R281	9.18	0.01	0%	0.03	9.19	46%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R282	9.18	0.01	0%	0.03	9.19	46%
R283	9.18	0.01	0%	0.03	9.19	46%
R284	9.18	0.01	0%	0.03	9.19	46%
R285	9.18	0.01	0%	0.03	9.19	46%
R286	9.18	0.01	0%	0.03	9.19	46%
R287	9.18	0.01	0%	0.03	9.19	46%
R288	9.18	0.01	0%	0.03	9.19	46%
R289	9.18	0.01	0%	0.03	9.19	46%
R290	9.18	0.01	0%	0.03	9.19	46%
R291	9.18	0.01	0%	0.03	9.19	46%
R292	9.18	0.01	0%	0.03	9.19	46%
R293	9.18	0.01	0%	0.03	9.19	46%
R294	9.18	0.01	0%	0.03	9.19	46%
R295	9.87	0.01	0%	0.05	9.89	49%
R296	9.98	0.02	0%	0.05	9.99	50%
R297	10.00	0.02	0%	0.07	10.02	50%
R298	10.01	0.02	0%	0.08	10.03	50%
R299	9.77	0.03	0%	0.07	9.81	49%
R300	9.77	0.03	0%	0.07	9.81	49%
R301	9.53	0.01	0%	0.03	9.54	48%
R302	9.53	0.01	0%	0.03	9.55	48%
R303	9.86	0.01	0%	0.04	9.88	49%
R304	9.53	0.01	0%	0.03	9.54	48%
R305	9.22	0.02	0%	0.08	9.24	46%
R306	10.00	0.03	0%	0.07	10.02	50%
R307	9.85	0.01	0%	0.05	9.86	49%
R308	9.45	0.02	0%	0.04	9.46	47%
R309	10.00	0.02	0%	0.07	10.02	50%
R310	9.29	0.01	0%	0.02	9.30	47%
R311	9.77	0.03	0%	0.07	9.81	49%
R312	9.77	0.03	0%	0.07	9.81	49%
R313	9.77	0.03	0%	0.07	9.81	49%
R314	9.77	0.03	0%	0.07	9.81	49%
R315	9.77	0.03	0%	0.07	9.81	49%
R316	9.86	0.01	0%	0.04	9.87	49%
R317	9.53	0.01	0%	0.03	9.54	48%
R318	9.44	0.01	0%	0.04	9.46	47%
R319	10.10	0.01	0%	0.18	10.11	51%
R320	9.94	0.01	0%	0.37	9.95	50%
R321	9.89	0.01	0%	0.37	9.90	49%
R322	9.97	0.01	0%	0.17	9.98	50%
R323	10.00	0.01	0%	0.08	10.02	50%
R324	9.48	0.01	0%	0.07	9.49	47%
R325	9.64	0.01	0%	0.07	9.65	48%
R326	9.07	0.01	0%	0.08	9.07	45%
R327	9.09	0.01	0%	0.10	9.10	46%
R328	9.06	0.01	0%	0.25	9.06	45%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R329	9.03	0.01	0%	0.37	9.04	45%
R330	9.53	0.01	0%	0.00	9.54	48%
R331	9.72	0.01	0%	0.00	9.73	49%
R332	9.52	0.01	0%	0.56	9.53	48%
R333	9.51	0.01	0%	0.51	9.52	48%
R334	9.50	0.01	0%	0.59	9.50	48%
R335	9.46	0.01	0%	0.63	9.47	47%
R336	9.41	0.01	0%	0.42	9.42	47%
R337	9.49	0.01	0%	0.26	9.50	47%
R338	9.71	0.01	0%	0.17	9.72	49%

**Table 8B.H7 Modelled Annual Mean NH<sub>3</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R1	2.17	0.01	0%	0.01	2.19	1%
R2	2.29	0.01	0%	0.02	2.32	1%
R3	2.86	0.01	0%	0.01	2.88	2%
R4	4.05	0.02	0%	0.02	4.10	2%
R5	3.20	0.07	0%	0.01	3.29	2%
R6	3.31	0.03	0%	0.07	3.41	2%
R7	2.97	0.03	0%	0.02	3.03	2%
R8	2.46	0.01	0%	0.00	2.48	1%
R9	3.13	0.02	0%	0.01	3.16	2%
R10	2.18	0.02	0%	0.00	2.20	1%
R11	3.20	0.03	0%	0.01	3.24	2%
R12	2.09	0.01	0%	0.00	2.11	1%
R13	2.09	0.01	0%	0.00	2.11	1%
R14	2.09	0.01	0%	0.00	2.11	1%
R15	2.18	0.01	0%	0.01	2.20	1%
R16	2.21	0.04	0%	0.00	2.25	1%
R17	2.24	0.05	0%	0.00	2.29	1%
R18	2.39	0.05	0%	0.00	2.45	1%
R19	3.76	0.06	0%	0.01	3.82	2%
R20	3.79	0.07	0%	0.01	3.87	2%
R21	3.30	0.06	0%	0.01	3.37	2%
R22	2.53	0.06	0%	0.00	2.59	1%
R23	3.95	0.05	0%	0.01	4.02	2%
R24	4.04	0.05	0%	0.01	4.10	2%
R26	3.50	0.05	0%	0.01	3.55	2%
R27	3.42	0.05	0%	0.01	3.48	2%
R28	2.26	0.04	0%	0.00	2.30	1%
R29	2.28	0.07	0%	0.00	2.35	1%
R30	4.31	0.03	0%	0.01	4.35	2%
R31	3.73	0.03	0%	0.01	3.77	2%
R32	3.82	0.03	0%	0.01	3.86	2%
R33	4.28	0.03	0%	0.01	4.32	2%
R34	2.51	0.03	0%	0.00	2.54	1%
R35	4.07	0.03	0%	0.01	4.11	2%
R36	4.19	0.03	0%	0.01	4.23	2%
R37	3.74	0.04	0%	0.01	3.79	2%
R38	3.64	0.04	0%	0.01	3.68	2%
R39	3.24	0.04	0%	0.01	3.29	2%
R40	2.93	0.05	0%	0.00	2.99	2%
R41	4.17	0.05	0%	0.01	4.22	2%
R42	3.60	0.05	0%	0.01	3.66	2%
R43	3.59	0.05	0%	0.01	3.65	2%
R44	2.65	0.05	0%	0.00	2.71	2%
R45	2.63	0.05	0%	0.00	2.68	1%
R46	2.29	0.06	0%	0.00	2.35	1%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R47	3.78	0.05	0%	0.01	3.84	2%
R48	2.68	0.05	0%	0.00	2.73	2%
R49	3.19	0.04	0%	0.00	3.23	2%
R50	3.60	0.04	0%	0.01	3.64	2%
R51	4.09	0.03	0%	0.01	4.13	2%
R52	3.62	0.03	0%	0.01	3.66	2%
R53	5.39	0.03	0%	0.02	5.43	3%
R54	5.02	0.03	0%	0.02	5.06	3%
R55	2.35	0.04	0%	0.00	2.39	1%
R56	2.37	0.05	0%	0.00	2.42	1%
R57	2.22	0.07	0%	0.00	2.30	1%
R58	2.20	0.07	0%	0.00	2.28	1%
R59	2.24	0.05	0%	0.00	2.30	1%
R60	2.25	0.02	0%	0.00	2.27	1%
R61	2.20	0.06	0%	0.00	2.25	1%
R62	2.22	0.06	0%	0.00	2.28	1%
R63	2.21	0.04	0%	0.00	2.25	1%
R64	2.23	0.04	0%	0.00	2.27	1%
R65	3.10	0.05	0%	0.00	3.15	2%
R66	2.44	0.03	0%	0.00	2.48	1%
R67	2.11	0.02	0%	0.00	2.13	1%
R68	2.08	0.02	0%	0.00	2.09	1%
R69	2.22	0.02	0%	0.01	2.24	1%
R70	2.02	0.00	0%	0.00	2.03	1%
R71	2.04	0.01	0%	0.00	2.05	1%
R72	2.18	0.03	0%	0.00	2.21	1%
R73	2.20	0.02	0%	0.00	2.23	1%
R74	2.13	0.03	0%	0.00	2.16	1%
R75	2.07	0.01	0%	0.00	2.08	1%
R76	3.20	0.02	0%	0.01	3.22	2%
R77	2.42	0.02	0%	0.01	2.45	1%
R78	2.25	0.02	0%	0.00	2.28	1%
R79	3.51	0.09	0%	0.01	3.61	2%
R80	2.26	0.04	0%	0.00	2.30	1%
R81	2.21	0.04	0%	0.00	2.26	1%
R82	2.60	0.05	0%	0.00	2.65	1%
R83	2.40	0.00	0%	0.14	2.54	1%
R84	2.91	0.09	0%	0.01	3.01	2%
R85	3.46	0.09	0%	0.01	3.56	2%
R86	2.49	0.09	0%	0.01	2.59	1%
R87	2.36	0.05	0%	0.00	2.41	1%
R88	2.34	0.06	0%	0.00	2.40	1%
R89	2.38	0.02	0%	0.00	2.40	1%
R90	2.61	0.05	0%	0.00	2.66	1%
R91	2.45	0.05	0%	0.00	2.50	1%
R92	2.09	0.03	0%	0.00	2.12	1%
R93	2.08	0.02	0%	0.00	2.10	1%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic PEC	%PEC of AQAL
R94	2.61	0.03	0%	0.00	2.65 1%
R95	4.27	0.02	0%	0.01	4.31 2%
R96	2.76	0.09	0%	0.01	2.86 2%
R97	2.27	0.04	0%	0.00	2.32 1%
R98	2.29	0.06	0%	0.00	2.35 1%
R99	2.48	0.05	0%	0.00	2.53 1%
R100	2.09	0.03	0%	0.00	2.12 1%
R101	2.10	0.03	0%	0.00	2.12 1%
R102	2.07	0.01	0%	0.00	2.09 1%
R103	2.18	0.03	0%	0.00	2.21 1%
R104	2.06	0.01	0%	0.00	2.07 1%
R105	2.34	0.02	0%	0.00	2.36 1%
R106	2.41	0.02	0%	0.00	2.44 1%
R107	2.39	0.09	0%	0.01	2.49 1%
R108	2.24	0.03	0%	0.00	2.27 1%
R109	2.30	0.04	0%	0.00	2.33 1%
R110	2.26	0.04	0%	0.00	2.29 1%
R111	2.52	0.03	0%	0.00	2.55 1%
R112	2.33	0.02	0%	0.00	2.35 1%
R113	2.62	0.03	0%	0.00	2.66 1%
R114	2.69	0.03	0%	0.00	2.73 2%
R115	2.19	0.02	0%	0.00	2.21 1%
R116	2.65	0.02	0%	0.03	2.71 2%
R117	2.49	0.02	0%	0.00	2.52 1%
R118	2.52	0.02	0%	0.00	2.55 1%
R119	2.85	0.04	0%	0.00	2.89 2%
R120	2.53	0.02	0%	0.00	2.56 1%
R121	2.45	0.05	0%	0.00	2.50 1%
R122	2.49	0.05	0%	0.00	2.54 1%
R123	2.47	0.05	0%	0.00	2.52 1%
R124	2.43	0.05	0%	0.00	2.48 1%
R125	2.37	0.05	0%	0.00	2.42 1%
R126	2.35	0.05	0%	0.00	2.41 1%
R127	2.35	0.05	0%	0.00	2.40 1%
R128	2.34	0.05	0%	0.00	2.40 1%
R129	2.28	0.05	0%	0.00	2.34 1%
R130	2.28	0.05	0%	0.00	2.34 1%
R131	2.29	0.05	0%	0.00	2.34 1%
R132	2.29	0.05	0%	0.00	2.35 1%
R133	2.29	0.05	0%	0.00	2.35 1%
R134	2.30	0.05	0%	0.00	2.35 1%
R135	2.30	0.05	0%	0.00	2.36 1%
R136	2.28	0.05	0%	0.00	2.33 1%
R137	2.28	0.05	0%	0.00	2.34 1%
R138	2.28	0.05	0%	0.00	2.34 1%
R139	2.29	0.05	0%	0.00	2.34 1%
R140	2.29	0.05	0%	0.00	2.34 1%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic PEC	PEC	%PEC of AQAL
R141	2.29	0.05	0%	0.00	2.35	1%
R142	2.29	0.05	0%	0.00	2.35	1%
R143	2.29	0.05	0%	0.00	2.35	1%
R144	2.30	0.05	0%	0.00	2.35	1%
R145	2.41	0.05	0%	0.00	2.46	1%
R146	2.42	0.05	0%	0.00	2.47	1%
R147	2.44	0.05	0%	0.00	2.49	1%
R148	2.46	0.05	0%	0.00	2.51	1%
R149	2.50	0.05	0%	0.00	2.55	1%
R150	2.51	0.05	0%	0.00	2.56	1%
R151	2.53	0.05	0%	0.00	2.58	1%
R152	2.55	0.05	0%	0.00	2.60	1%
R153	2.52	0.05	0%	0.00	2.57	1%
R154	2.47	0.05	0%	0.00	2.52	1%
R155	2.46	0.05	0%	0.00	2.51	1%
R156	2.45	0.05	0%	0.00	2.50	1%
R157	2.44	0.05	0%	0.00	2.49	1%
R158	2.44	0.05	0%	0.00	2.48	1%
R159	2.44	0.05	0%	0.00	2.49	1%
R160	3.09	0.05	0%	0.00	3.15	2%
R161	3.07	0.05	0%	0.00	3.12	2%
R162	2.92	0.05	0%	0.00	2.98	2%
R163	2.93	0.05	0%	0.00	2.99	2%
R164	3.03	0.05	0%	0.00	3.09	2%
R165	2.93	0.05	0%	0.00	2.98	2%
R166	2.92	0.05	0%	0.00	2.97	2%
R167	3.03	0.05	0%	0.00	3.08	2%
R168	2.91	0.05	0%	0.00	2.97	2%
R169	2.87	0.05	0%	0.00	2.93	2%
R170	3.02	0.05	0%	0.00	3.08	2%
R171	2.92	0.05	0%	0.00	2.98	2%
R172	3.02	0.05	0%	0.00	3.08	2%
R173	2.99	0.05	0%	0.00	3.05	2%
R174	2.99	0.05	0%	0.00	3.04	2%
R175	3.00	0.05	0%	0.00	3.06	2%
R176	2.97	0.05	0%	0.00	3.02	2%
R177	2.97	0.05	0%	0.00	3.02	2%
R178	2.96	0.05	0%	0.00	3.02	2%
R179	3.19	0.05	0%	0.00	3.25	2%
R180	3.15	0.05	0%	0.00	3.20	2%
R181	3.17	0.05	0%	0.00	3.22	2%
R182	3.12	0.05	0%	0.00	3.18	2%
R183	3.10	0.05	0%	0.00	3.16	2%
R184	3.10	0.05	0%	0.00	3.15	2%
R185	3.09	0.05	0%	0.00	3.15	2%
R186	3.05	0.05	0%	0.00	3.11	2%
R187	3.05	0.05	0%	0.00	3.11	2%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic PEC	%PEC of AQAL
R188	3.01	0.05	0%	0.00	3.07 2%
R189	3.03	0.05	0%	0.00	3.08 2%
R190	3.03	0.05	0%	0.00	3.08 2%
R191	3.07	0.05	0%	0.00	3.13 2%
R192	2.36	0.05	0%	0.00	2.40 1%
R193	2.36	0.05	0%	0.00	2.41 1%
R194	2.36	0.05	0%	0.00	2.41 1%
R195	2.36	0.05	0%	0.00	2.41 1%
R196	2.36	0.05	0%	0.00	2.41 1%
R197	2.36	0.05	0%	0.00	2.41 1%
R198	2.36	0.05	0%	0.00	2.41 1%
R199	2.36	0.05	0%	0.00	2.41 1%
R200	2.31	0.05	0%	0.00	2.36 1%
R201	2.31	0.05	0%	0.00	2.36 1%
R202	2.32	0.05	0%	0.00	2.37 1%
R203	2.31	0.05	0%	0.00	2.36 1%
R204	2.32	0.05	0%	0.00	2.36 1%
R205	2.32	0.05	0%	0.00	2.37 1%
R206	2.33	0.05	0%	0.00	2.37 1%
R207	2.33	0.05	0%	0.00	2.38 1%
R208	2.33	0.04	0%	0.00	2.38 1%
R209	2.33	0.05	0%	0.00	2.37 1%
R210	2.34	0.04	0%	0.00	2.39 1%
R211	2.34	0.05	0%	0.00	2.38 1%
R212	2.34	0.05	0%	0.00	2.39 1%
R213	2.34	0.05	0%	0.00	2.39 1%
R214	2.39	0.03	0%	0.00	2.41 1%
R215	2.39	0.02	0%	0.00	2.42 1%
R216	2.41	0.02	0%	0.00	2.44 1%
R217	2.43	0.02	0%	0.00	2.45 1%
R218	2.44	0.02	0%	0.00	2.47 1%
R219	2.47	0.02	0%	0.00	2.49 1%
R220	2.49	0.02	0%	0.00	2.52 1%
R221	2.44	0.02	0%	0.00	2.47 1%
R222	2.44	0.02	0%	0.00	2.47 1%
R223	2.44	0.02	0%	0.00	2.47 1%
R224	2.42	0.02	0%	0.00	2.45 1%
R225	2.52	0.02	0%	0.00	2.55 1%
R226	2.55	0.02	0%	0.00	2.57 1%
R227	2.58	0.02	0%	0.00	2.60 1%
R228	2.61	0.02	0%	0.00	2.64 1%
R229	2.60	0.02	0%	0.00	2.62 1%
R230	2.64	0.02	0%	0.00	2.67 1%
R231	2.72	0.02	0%	0.00	2.75 2%
R232	2.67	0.02	0%	0.00	2.70 2%
R233	2.68	0.02	0%	0.00	2.71 2%
R234	2.66	0.02	0%	0.00	2.69 1%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R235	2.67	0.02	0%	0.00	2.70	1%
R236	2.67	0.02	0%	0.00	2.70	1%
R237	2.68	0.02	0%	0.00	2.71	2%
R238	2.67	0.02	0%	0.00	2.70	1%
R239	2.69	0.02	0%	0.00	2.72	2%
R240	2.64	0.02	0%	0.00	2.67	1%
R241	2.68	0.02	0%	0.00	2.71	2%
R242	2.67	0.02	0%	0.00	2.69	1%
R243	2.66	0.02	0%	0.00	2.69	1%
R244	2.65	0.02	0%	0.00	2.68	1%
R245	2.66	0.02	0%	0.00	2.69	1%
R246	2.65	0.02	0%	0.00	2.68	1%
R247	2.67	0.02	0%	0.00	2.70	2%
R248	2.64	0.02	0%	0.00	2.67	1%
R249	2.64	0.02	0%	0.00	2.67	1%
R250	2.62	0.02	0%	0.00	2.65	1%
R251	2.68	0.02	0%	0.00	2.71	2%
R252	2.55	0.02	0%	0.00	2.57	1%
R253	2.05	0.01	0%	0.00	2.06	1%
R254	2.10	0.01	0%	0.00	2.11	1%
R255	2.10	0.01	0%	0.00	2.11	1%
R256	2.10	0.01	0%	0.00	2.11	1%
R257	2.10	0.01	0%	0.00	2.12	1%
R258	2.10	0.01	0%	0.00	2.12	1%
R259	2.10	0.01	0%	0.00	2.11	1%
R260	2.10	0.01	0%	0.00	2.12	1%
R261	2.10	0.01	0%	0.00	2.12	1%
R262	2.10	0.01	0%	0.00	2.12	1%
R263	2.09	0.01	0%	0.00	2.10	1%
R264	2.09	0.01	0%	0.00	2.10	1%
R265	2.09	0.01	0%	0.00	2.10	1%
R266	2.09	0.01	0%	0.00	2.10	1%
R267	2.09	0.01	0%	0.00	2.10	1%
R268	2.09	0.01	0%	0.00	2.10	1%
R269	2.09	0.01	0%	0.00	2.10	1%
R270	2.09	0.01	0%	0.00	2.10	1%
R271	2.09	0.01	0%	0.00	2.10	1%
R272	2.09	0.01	0%	0.00	2.10	1%
R273	2.09	0.01	0%	0.00	2.10	1%
R274	2.09	0.01	0%	0.00	2.10	1%
R275	2.09	0.01	0%	0.00	2.10	1%
R276	2.09	0.01	0%	0.00	2.10	1%
R277	2.09	0.01	0%	0.00	2.10	1%
R278	2.09	0.01	0%	0.00	2.10	1%
R279	2.09	0.01	0%	0.00	2.10	1%
R280	2.09	0.01	0%	0.00	2.10	1%
R281	2.09	0.01	0%	0.00	2.10	1%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic PEC	%PEC of AQAL
R282	2.09	0.01	0%	0.00	2.10 1%
R283	2.09	0.01	0%	0.00	2.10 1%
R284	2.10	0.01	0%	0.00	2.11 1%
R285	2.10	0.01	0%	0.00	2.11 1%
R286	2.10	0.01	0%	0.00	2.11 1%
R287	2.10	0.01	0%	0.00	2.11 1%
R288	2.10	0.01	0%	0.00	2.11 1%
R289	2.10	0.01	0%	0.00	2.11 1%
R290	2.10	0.01	0%	0.00	2.11 1%
R291	2.10	0.01	0%	0.00	2.11 1%
R292	2.10	0.01	0%	0.00	2.11 1%
R293	2.10	0.01	0%	0.00	2.11 1%
R294	2.10	0.01	0%	0.00	2.11 1%
R295	2.13	0.03	0%	0.00	2.16 1%
R296	2.14	0.04	0%	0.00	2.18 1%
R297	2.20	0.04	0%	0.00	2.24 1%
R298	2.23	0.04	0%	0.00	2.27 1%
R299	2.20	0.07	0%	0.00	2.27 1%
R300	2.20	0.07	0%	0.00	2.27 1%
R301	2.08	0.02	0%	0.00	2.10 1%
R302	2.08	0.03	0%	0.00	2.11 1%
R303	2.11	0.03	0%	0.00	2.13 1%
R304	2.08	0.02	0%	0.00	2.10 1%
R305	2.22	0.04	0%	0.00	2.26 1%
R306	2.20	0.06	0%	0.00	2.25 1%
R307	2.13	0.01	0%	0.00	2.15 1%
R308	2.11	0.03	0%	0.00	2.15 1%
R309	2.20	0.04	0%	0.00	2.24 1%
R310	2.06	0.02	0%	0.00	2.08 1%
R311	2.20	0.07	0%	0.00	2.27 1%
R312	2.20	0.07	0%	0.00	2.27 1%
R313	2.20	0.07	0%	0.00	2.27 1%
R314	2.20	0.07	0%	0.00	2.27 1%
R315	2.20	0.07	0%	0.00	2.27 1%
R316	2.10	0.03	0%	0.00	2.13 1%
R317	2.08	0.02	0%	0.00	2.10 1%
R318	2.11	0.03	0%	0.00	2.14 1%
R319	2.48	0.02	0%	0.00	2.50 1%
R320	3.61	0.02	0%	0.01	3.63 2%
R321	3.48	0.01	0%	0.01	3.49 2%
R322	3.68	0.02	0%	0.00	3.70 2%
R323	3.81	0.02	0%	0.00	3.83 2%
R324	3.21	0.01	0%	0.00	3.22 2%
R325	2.75	0.02	0%	0.00	2.77 2%
R326	2.49	0.02	0%	0.01	2.50 1%
R327	2.57	0.01	0%	0.01	2.58 1%
R328	2.46	0.01	0%	0.02	2.47 1%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R329	2.34	0.01	0%	0.03	2.35	1%
R330	3.34	0.01	0%	0.00	3.35	2%
R331	3.22	0.02	0%	0.00	3.24	2%
R332	2.69	0.02	0%	0.01	2.71	2%
R333	3.12	0.01	0%	0.01	3.13	2%
R334	3.07	0.01	0%	0.01	3.08	2%
R335	2.96	0.01	0%	0.01	2.97	2%
R336	2.41	0.02	0%	0.01	2.43	1%
R337	2.63	0.02	0%	0.00	2.65	1%
R338	3.19	0.02	0%	0.00	3.21	2%

**Table 8B.H8 Modelled Daily Mean NH<sub>3</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R1	4.35	1.52	0%	0.01	5.88	0%
R2	4.59	2.14	0%	0.04	6.77	0%
R3	5.71	2.05	0%	0.02	7.78	0%
R4	8.11	1.48	0%	0.04	9.63	0%
R5	6.40	2.34	0%	0.03	8.77	0%
R6	6.61	2.46	0%	0.14	9.22	0%
R7	5.94	2.01	0%	0.04	7.99	0%
R8	4.93	1.53	0%	0.01	6.46	0%
R9	6.26	1.29	0%	0.02	7.56	0%
R10	4.35	1.05	0%	0.00	5.41	0%
R11	6.40	1.23	0%	0.02	7.65	0%
R12	4.19	0.86	0%	0.00	5.05	0%
R13	4.19	0.92	0%	0.00	5.10	0%
R14	4.19	1.12	0%	0.00	5.31	0%
R15	4.37	1.25	0%	0.01	5.63	0%
R16	4.41	1.43	0%	0.01	5.85	0%
R17	4.47	1.69	0%	0.00	6.17	0%
R18	4.79	1.51	0%	0.01	6.30	0%
R19	7.52	1.49	0%	0.02	9.02	0%
R20	7.58	1.64	0%	0.02	9.24	0%
R21	6.60	1.55	0%	0.01	8.17	0%
R22	5.06	1.33	0%	0.01	6.40	0%
R23	7.91	1.30	0%	0.02	9.23	0%
R24	8.08	1.23	0%	0.02	9.33	0%
R26	6.99	1.20	0%	0.02	8.21	0%
R27	6.83	1.42	0%	0.02	8.27	0%
R28	4.52	0.94	0%	0.00	5.46	0%
R29	4.56	1.35	0%	0.00	5.92	0%
R30	8.62	1.11	0%	0.03	9.75	0%
R31	7.46	1.12	0%	0.03	8.61	0%
R32	7.64	1.12	0%	0.02	8.78	0%
R33	8.56	1.06	0%	0.02	9.64	0%
R34	5.01	0.98	0%	0.01	6.00	0%
R35	8.15	1.05	0%	0.02	9.22	0%
R36	8.38	1.06	0%	0.02	9.46	0%
R37	7.49	0.97	0%	0.02	8.48	0%
R38	7.28	1.12	0%	0.01	8.41	0%
R39	6.49	1.19	0%	0.01	7.69	0%
R40	5.87	1.16	0%	0.01	7.03	0%
R41	8.34	1.12	0%	0.02	9.47	0%
R42	7.20	1.11	0%	0.01	8.32	0%
R43	7.18	1.10	0%	0.01	8.29	0%
R44	5.31	1.01	0%	0.01	6.32	0%
R45	5.27	0.85	0%	0.01	6.13	0%
R46	4.58	0.96	0%	0.00	5.55	0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R47	7.56	0.89	0%	0.01	8.47	0%
R48	5.37	0.84	0%	0.01	6.21	0%
R49	6.37	0.83	0%	0.01	7.21	0%
R50	7.19	0.73	0%	0.01	7.94	0%
R51	8.19	0.69	0%	0.01	8.89	0%
R52	7.25	0.68	0%	0.01	7.94	0%
R53	10.77	0.74	0%	0.04	11.55	0%
R54	10.04	0.84	0%	0.04	10.91	0%
R55	4.69	0.81	0%	0.00	5.51	0%
R56	4.74	0.95	0%	0.00	5.69	0%
R57	4.45	1.20	0%	0.00	5.65	0%
R58	4.40	1.25	0%	0.00	5.65	0%
R59	4.48	1.28	0%	0.00	5.77	0%
R60	4.50	0.92	0%	0.00	5.42	0%
R61	4.39	1.13	0%	0.00	5.52	0%
R62	4.44	1.02	0%	0.00	5.46	0%
R63	4.41	0.98	0%	0.00	5.39	0%
R64	4.46	0.92	0%	0.00	5.38	0%
R65	6.19	0.86	0%	0.01	7.06	0%
R66	4.89	0.81	0%	0.01	5.70	0%
R67	4.22	0.85	0%	0.00	5.08	0%
R68	4.15	1.00	0%	0.00	5.15	0%
R69	4.43	1.39	0%	0.01	5.84	0%
R70	4.04	0.69	0%	0.00	4.73	0%
R71	4.09	0.79	0%	0.00	4.88	0%
R72	4.36	0.86	0%	0.00	5.22	0%
R73	4.41	0.87	0%	0.00	5.28	0%
R74	4.25	0.72	0%	0.00	4.98	0%
R75	4.14	0.66	0%	0.00	4.81	0%
R76	6.39	0.96	0%	0.02	7.36	0%
R77	4.84	1.10	0%	0.02	5.96	0%
R78	4.50	2.10	0%	0.01	6.61	0%
R79	7.02	1.81	0%	0.02	8.85	0%
R80	4.52	0.81	0%	0.00	5.33	0%
R81	4.43	0.84	0%	0.00	5.27	0%
R82	5.19	1.11	0%	0.01	6.30	0%
R83	4.81	1.98	0%	0.28	7.06	0%
R84	5.81	1.89	0%	0.02	7.73	0%
R85	6.92	1.79	0%	0.02	8.74	0%
R86	4.99	2.16	0%	0.02	7.17	0%
R87	4.72	0.82	0%	0.00	5.54	0%
R88	4.67	1.34	0%	0.00	6.01	0%
R89	4.76	0.70	0%	0.00	5.46	0%
R90	5.22	0.84	0%	0.01	6.06	0%
R91	4.91	0.82	0%	0.00	5.73	0%
R92	4.19	0.73	0%	0.00	4.92	0%
R93	4.16	0.64	0%	0.00	4.80	0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R94	5.21	1.31	0%	0.01	6.53	0%
R95	8.55	0.82	0%	0.03	9.40	0%
R96	5.52	1.86	0%	0.01	7.40	0%
R97	4.54	0.82	0%	0.00	5.36	0%
R98	4.58	0.96	0%	0.00	5.54	0%
R99	4.97	0.82	0%	0.00	5.79	0%
R100	4.18	0.69	0%	0.00	4.87	0%
R101	4.19	0.71	0%	0.00	4.90	0%
R102	4.15	0.67	0%	0.00	4.81	0%
R103	4.35	0.86	0%	0.00	5.21	0%
R104	4.11	0.65	0%	0.00	4.76	0%
R105	4.67	0.84	0%	0.01	5.51	0%
R106	4.83	0.90	0%	0.01	5.73	0%
R107	4.79	2.16	0%	0.01	6.96	0%
R108	4.48	3.08	0%	0.01	7.57	0%
R109	4.59	0.80	0%	0.00	5.40	0%
R110	4.51	0.87	0%	0.00	5.38	0%
R111	5.03	0.75	0%	0.00	5.79	0%
R112	4.66	0.75	0%	0.00	5.41	0%
R113	5.24	0.71	0%	0.01	5.96	0%
R114	5.38	0.72	0%	0.01	6.10	0%
R115	4.38	0.74	0%	0.00	5.12	0%
R116	5.30	2.47	0%	0.07	7.84	0%
R117	4.99	0.77	0%	0.01	5.76	0%
R118	5.05	0.78	0%	0.01	5.83	0%
R119	5.70	0.75	0%	0.01	6.46	0%
R120	5.06	0.78	0%	0.01	5.85	0%
R121	4.89	0.84	0%	0.00	5.74	0%
R122	4.97	0.85	0%	0.00	5.83	0%
R123	4.93	0.85	0%	0.00	5.78	0%
R124	4.85	0.84	0%	0.00	5.69	0%
R125	4.73	0.91	0%	0.00	5.65	0%
R126	4.71	0.91	0%	0.00	5.63	0%
R127	4.70	0.92	0%	0.00	5.62	0%
R128	4.68	0.92	0%	0.00	5.60	0%
R129	4.56	0.95	0%	0.00	5.51	0%
R130	4.56	0.94	0%	0.00	5.51	0%
R131	4.58	0.94	0%	0.00	5.52	0%
R132	4.58	0.94	0%	0.00	5.52	0%
R133	4.59	0.93	0%	0.00	5.53	0%
R134	4.59	0.93	0%	0.00	5.53	0%
R135	4.60	0.93	0%	0.00	5.53	0%
R136	4.55	0.95	0%	0.00	5.50	0%
R137	4.56	0.95	0%	0.00	5.51	0%
R138	4.56	0.94	0%	0.00	5.51	0%
R139	4.57	0.94	0%	0.00	5.51	0%
R140	4.57	0.94	0%	0.00	5.52	0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R141	4.58	0.94	0%	0.00	5.52	0%
R142	4.58	0.94	0%	0.00	5.52	0%
R143	4.59	0.93	0%	0.00	5.53	0%
R144	4.59	0.93	0%	0.00	5.53	0%
R145	4.81	0.84	0%	0.00	5.66	0%
R146	4.84	0.84	0%	0.00	5.68	0%
R147	4.88	0.84	0%	0.00	5.73	0%
R148	4.92	0.85	0%	0.00	5.77	0%
R149	5.00	0.85	0%	0.00	5.86	0%
R150	5.02	0.85	0%	0.00	5.88	0%
R151	5.07	0.85	0%	0.00	5.92	0%
R152	5.10	0.86	0%	0.00	5.96	0%
R153	5.04	0.85	0%	0.00	5.90	0%
R154	4.95	0.85	0%	0.00	5.80	0%
R155	4.91	0.84	0%	0.00	5.76	0%
R156	4.89	0.84	0%	0.00	5.74	0%
R157	4.87	0.84	0%	0.00	5.72	0%
R158	4.87	0.84	0%	0.00	5.71	0%
R159	4.88	0.84	0%	0.00	5.73	0%
R160	6.18	0.90	0%	0.01	7.09	0%
R161	6.13	0.90	0%	0.01	7.04	0%
R162	5.84	0.91	0%	0.01	6.76	0%
R163	5.86	0.91	0%	0.01	6.78	0%
R164	6.06	0.90	0%	0.01	6.97	0%
R165	5.86	0.91	0%	0.01	6.78	0%
R166	5.83	0.91	0%	0.01	6.75	0%
R167	6.05	0.90	0%	0.01	6.97	0%
R168	5.83	0.91	0%	0.01	6.74	0%
R169	5.75	0.91	0%	0.01	6.67	0%
R170	6.05	0.91	0%	0.01	6.96	0%
R171	5.85	0.91	0%	0.01	6.76	0%
R172	6.04	0.91	0%	0.01	6.96	0%
R173	5.98	0.91	0%	0.01	6.89	0%
R174	5.97	0.91	0%	0.01	6.89	0%
R175	6.00	0.91	0%	0.01	6.92	0%
R176	5.94	0.91	0%	0.01	6.85	0%
R177	5.93	0.91	0%	0.01	6.85	0%
R178	5.93	0.91	0%	0.01	6.84	0%
R179	6.39	0.90	0%	0.01	7.30	0%
R180	6.29	0.90	0%	0.01	7.20	0%
R181	6.33	0.90	0%	0.01	7.24	0%
R182	6.24	0.90	0%	0.01	7.15	0%
R183	6.20	0.90	0%	0.01	7.11	0%
R184	6.19	0.90	0%	0.01	7.10	0%
R185	6.19	0.91	0%	0.01	7.10	0%
R186	6.11	0.91	0%	0.01	7.02	0%
R187	6.10	0.91	0%	0.01	7.02	0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R188	6.03	0.91	0%	0.01	6.95	0%
R189	6.06	0.91	0%	0.01	6.97	0%
R190	6.05	0.91	0%	0.01	6.97	0%
R191	6.14	0.90	0%	0.01	7.05	0%
R192	4.71	0.89	0%	0.00	5.61	0%
R193	4.72	0.90	0%	0.00	5.62	0%
R194	4.72	0.89	0%	0.00	5.62	0%
R195	4.73	0.89	0%	0.00	5.63	0%
R196	4.72	0.90	0%	0.00	5.62	0%
R197	4.73	0.90	0%	0.00	5.63	0%
R198	4.72	0.89	0%	0.00	5.61	0%
R199	4.73	0.89	0%	0.00	5.62	0%
R200	4.62	0.90	0%	0.00	5.52	0%
R201	4.63	0.90	0%	0.00	5.53	0%
R202	4.64	0.89	0%	0.00	5.54	0%
R203	4.62	0.90	0%	0.00	5.53	0%
R204	4.63	0.90	0%	0.00	5.53	0%
R205	4.64	0.90	0%	0.00	5.54	0%
R206	4.65	0.89	0%	0.00	5.55	0%
R207	4.66	0.89	0%	0.00	5.55	0%
R208	4.67	0.89	0%	0.00	5.56	0%
R209	4.65	0.89	0%	0.00	5.55	0%
R210	4.68	0.89	0%	0.00	5.57	0%
R211	4.67	0.89	0%	0.00	5.57	0%
R212	4.68	0.89	0%	0.00	5.57	0%
R213	4.69	0.89	0%	0.00	5.58	0%
R214	4.77	0.87	0%	0.01	5.65	0%
R215	4.79	0.87	0%	0.01	5.67	0%
R216	4.82	0.87	0%	0.01	5.70	0%
R217	4.85	0.87	0%	0.01	5.73	0%
R218	4.89	0.87	0%	0.01	5.77	0%
R219	4.93	0.87	0%	0.01	5.81	0%
R220	4.98	0.87	0%	0.01	5.85	0%
R221	4.89	0.87	0%	0.01	5.77	0%
R222	4.88	0.87	0%	0.01	5.76	0%
R223	4.88	0.88	0%	0.01	5.76	0%
R224	4.84	0.88	0%	0.01	5.73	0%
R225	5.04	0.86	0%	0.01	5.91	0%
R226	5.09	0.86	0%	0.01	5.96	0%
R227	5.15	0.86	0%	0.01	6.02	0%
R228	5.22	0.86	0%	0.01	6.09	0%
R229	5.19	0.87	0%	0.01	6.07	0%
R230	5.28	0.87	0%	0.01	6.16	0%
R231	5.43	0.86	0%	0.01	6.31	0%
R232	5.35	0.86	0%	0.01	6.22	0%
R233	5.35	0.86	0%	0.01	6.23	0%
R234	5.33	0.86	0%	0.01	6.20	0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R235	5.34	0.86	0%	0.01	6.21	0%
R236	5.34	0.86	0%	0.01	6.22	0%
R237	5.36	0.86	0%	0.01	6.23	0%
R238	5.34	0.86	0%	0.01	6.21	0%
R239	5.38	0.86	0%	0.01	6.25	0%
R240	5.29	0.86	0%	0.01	6.15	0%
R241	5.35	0.86	0%	0.01	6.22	0%
R242	5.33	0.85	0%	0.01	6.20	0%
R243	5.33	0.85	0%	0.01	6.19	0%
R244	5.31	0.85	0%	0.01	6.17	0%
R245	5.32	0.85	0%	0.01	6.19	0%
R246	5.31	0.85	0%	0.01	6.17	0%
R247	5.34	0.85	0%	0.01	6.20	0%
R248	5.28	0.85	0%	0.01	6.14	0%
R249	5.28	0.85	0%	0.01	6.14	0%
R250	5.25	0.85	0%	0.01	6.11	0%
R251	5.36	0.85	0%	0.01	6.22	0%
R252	5.09	0.86	0%	0.01	5.96	0%
R253	4.10	0.92	0%	0.00	5.02	0%
R254	4.19	0.68	0%	0.00	4.88	0%
R255	4.20	0.69	0%	0.00	4.89	0%
R256	4.20	0.69	0%	0.00	4.90	0%
R257	4.20	0.70	0%	0.00	4.90	0%
R258	4.20	0.69	0%	0.00	4.90	0%
R259	4.20	0.69	0%	0.00	4.89	0%
R260	4.20	0.69	0%	0.00	4.90	0%
R261	4.21	0.70	0%	0.00	4.90	0%
R262	4.20	0.69	0%	0.00	4.90	0%
R263	4.18	0.66	0%	0.00	4.84	0%
R264	4.18	0.66	0%	0.00	4.84	0%
R265	4.18	0.66	0%	0.00	4.84	0%
R266	4.18	0.66	0%	0.00	4.84	0%
R267	4.18	0.66	0%	0.00	4.84	0%
R268	4.18	0.66	0%	0.00	4.84	0%
R269	4.18	0.66	0%	0.00	4.84	0%
R270	4.18	0.66	0%	0.00	4.84	0%
R271	4.18	0.66	0%	0.00	4.84	0%
R272	4.18	0.66	0%	0.00	4.84	0%
R273	4.18	0.66	0%	0.00	4.84	0%
R274	4.18	0.66	0%	0.00	4.84	0%
R275	4.18	0.66	0%	0.00	4.84	0%
R276	4.18	0.66	0%	0.00	4.84	0%
R277	4.18	0.66	0%	0.00	4.84	0%
R278	4.18	0.66	0%	0.00	4.84	0%
R279	4.18	0.66	0%	0.00	4.84	0%
R280	4.18	0.66	0%	0.00	4.84	0%
R281	4.18	0.66	0%	0.00	4.84	0%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
R282	4.18	0.66	0%	0.00	4.84	0%
R283	4.18	0.66	0%	0.00	4.84	0%
R284	4.20	0.68	0%	0.00	4.88	0%
R285	4.20	0.68	0%	0.00	4.88	0%
R286	4.20	0.68	0%	0.00	4.88	0%
R287	4.20	0.68	0%	0.00	4.88	0%
R288	4.20	0.68	0%	0.00	4.88	0%
R289	4.20	0.68	0%	0.00	4.88	0%
R290	4.20	0.68	0%	0.00	4.88	0%
R291	4.20	0.68	0%	0.00	4.88	0%
R292	4.20	0.68	0%	0.00	4.88	0%
R293	4.20	0.68	0%	0.00	4.88	0%
R294	4.20	0.68	0%	0.00	4.88	0%
R295	4.27	0.76	0%	0.00	5.03	0%
R296	4.29	0.80	0%	0.00	5.09	0%
R297	4.40	0.84	0%	0.00	5.25	0%
R298	4.45	0.85	0%	0.00	5.30	0%
R299	4.40	1.13	0%	0.00	5.54	0%
R300	4.40	1.14	0%	0.00	5.55	0%
R301	4.15	0.63	0%	0.00	4.78	0%
R302	4.16	0.66	0%	0.00	4.82	0%
R303	4.22	0.67	0%	0.00	4.89	0%
R304	4.15	0.63	0%	0.00	4.79	0%
R305	4.44	0.97	0%	0.00	5.41	0%
R306	4.40	1.07	0%	0.00	5.47	0%
R307	4.27	1.08	0%	0.00	5.35	0%
R308	4.23	0.79	0%	0.00	5.02	0%
R309	4.40	0.85	0%	0.00	5.25	0%
R310	4.12	0.61	0%	0.00	4.74	0%
R311	4.40	1.14	0%	0.00	5.55	0%
R312	4.40	1.14	0%	0.00	5.55	0%
R313	4.40	1.14	0%	0.00	5.55	0%
R314	4.40	1.14	0%	0.00	5.54	0%
R315	4.40	1.14	0%	0.00	5.54	0%
R316	4.20	0.72	0%	0.00	4.93	0%
R317	4.15	0.64	0%	0.00	4.79	0%
R318	4.21	0.73	0%	0.00	4.95	0%
R319	4.96	0.73	0%	0.01	5.69	0%
R320	7.22	0.94	0%	0.01	8.17	0%
R321	6.96	0.72	0%	0.01	7.70	0%
R322	7.36	0.89	0%	0.01	8.27	0%
R323	7.62	0.77	0%	0.00	8.42	0%
R324	6.42	0.69	0%	0.01	7.13	0%
R325	5.50	0.81	0%	0.01	6.32	0%
R326	4.98	0.74	0%	0.01	5.73	0%
R327	5.14	0.69	0%	0.02	5.83	0%
R328	4.92	0.67	0%	0.04	5.59	0%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PC Traffic</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
<b>R329</b>	4.68	0.72	0%	0.06	5.41	0%
<b>R330</b>	6.68	0.60	0%	0.00	7.30	0%
<b>R331</b>	6.44	0.68	0%	0.00	7.13	0%
<b>R332</b>	5.38	0.65	0%	0.02	6.04	0%
<b>R333</b>	6.23	0.43	0%	0.02	6.68	0%
<b>R334</b>	6.13	0.42	0%	0.02	6.56	0%
<b>R335</b>	5.91	0.42	0%	0.03	6.35	0%
<b>R336</b>	4.83	0.71	0%	0.02	5.54	0%
<b>R337</b>	5.26	0.71	0%	0.01	5.98	0%
<b>R338</b>	6.38	0.70	0%	0.01	7.10	0%

**Table 8B.H9 Modelled 8-hour Mean CO Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	542.00	11.76	0%	553.76	6%
R2	522.00	10.27	0%	532.27	5%
R3	522.00	14.44	0%	536.44	5%
R4	522.00	12.83	0%	534.83	5%
R5	522.00	20.49	0%	542.49	5%
R6	512.00	17.90	0%	529.90	5%
R7	512.00	16.87	0%	528.87	5%
R8	558.00	11.47	0%	569.47	6%
R9	558.00	10.42	0%	568.42	6%
R10	558.00	8.63	0%	566.63	6%
R11	558.00	10.45	0%	568.45	6%
R12	560.00	6.23	0%	566.23	6%
R13	558.00	7.12	0%	565.12	6%
R14	542.00	9.39	0%	551.39	6%
R15	512.00	10.88	0%	522.88	5%
R16	524.00	11.70	0%	535.70	5%
R17	562.00	11.40	0%	573.40	6%
R18	562.00	10.42	0%	572.42	6%
R19	562.00	11.24	0%	573.24	6%
R20	562.00	13.12	0%	575.12	6%
R21	562.00	12.43	0%	574.43	6%
R22	562.00	10.96	0%	572.96	6%
R23	562.00	10.28	0%	572.28	6%
R24	562.00	9.90	0%	571.90	6%
R26	562.00	9.86	0%	571.86	6%
R27	562.00	10.45	0%	572.45	6%
R28	562.00	8.04	0%	570.04	6%
R29	562.00	11.60	0%	573.60	6%
R30	544.00	6.01	0%	550.01	6%
R31	544.00	5.83	0%	549.83	5%
R32	544.00	5.72	0%	549.72	5%
R33	544.00	5.60	0%	549.60	5%
R34	524.00	6.10	0%	530.10	5%
R35	562.00	6.01	0%	568.01	6%
R36	562.00	6.27	0%	568.27	6%
R37	562.00	6.04	0%	568.04	6%
R38	562.00	7.70	0%	569.70	6%
R39	562.00	8.41	0%	570.41	6%
R40	562.00	9.30	0%	571.30	6%
R41	562.00	9.13	0%	571.13	6%
R42	562.00	8.87	0%	570.87	6%
R43	562.00	8.93	0%	570.93	6%
R44	562.00	8.33	0%	570.33	6%
R45	564.00	7.26	0%	571.26	6%
R46	564.00	8.31	0%	572.31	6%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL	
R47	564.00	7.76	0%	571.76	6%
R48	564.00	6.99	0%	570.99	6%
R49	564.00	6.59	0%	570.59	6%
R50	564.00	6.00	0%	570.00	6%
R51	564.00	5.61	0%	569.61	6%
R52	564.00	5.23	0%	569.23	6%
R53	564.00	6.21	0%	570.21	6%
R54	560.00	6.46	0%	566.46	6%
R55	564.00	6.73	0%	570.73	6%
R56	564.00	8.32	0%	572.32	6%
R57	562.00	10.19	0%	572.19	6%
R58	562.00	10.78	0%	572.78	6%
R59	558.00	11.02	0%	569.02	6%
R60	560.00	6.85	0%	566.85	6%
R61	564.00	9.43	0%	573.43	6%
R62	564.00	8.41	0%	572.41	6%
R63	564.00	7.97	0%	571.97	6%
R64	564.00	7.60	0%	571.60	6%
R65	564.00	6.81	0%	570.81	6%
R66	564.00	6.55	0%	570.55	6%
R67	504.00	6.35	0%	510.35	5%
R68	502.00	8.76	0%	510.76	5%
R69	512.00	9.11	0%	521.11	5%
R70	482.00	2.89	0%	484.89	5%
R71	512.00	4.82	0%	516.82	5%
R72	564.00	6.43	0%	570.43	6%
R73	564.00	4.52	0%	568.52	6%
R74	564.00	4.74	0%	568.74	6%
R75	554.00	3.93	0%	557.93	6%
R76	554.00	4.70	0%	558.70	6%
R77	512.00	9.43	0%	521.43	5%
R78	522.00	16.91	0%	538.91	5%
R79	562.00	14.92	0%	576.92	6%
R80	564.00	6.33	0%	570.33	6%
R81	564.00	6.64	0%	570.64	6%
R82	562.00	8.66	0%	570.66	6%
R83	522.00	4.86	0%	526.86	5%
R84	562.00	15.63	0%	577.63	6%
R85	562.00	14.49	0%	576.49	6%
R86	562.00	18.75	0%	580.75	6%
R87	564.00	6.88	0%	570.88	6%
R88	562.00	11.29	0%	573.29	6%
R89	558.00	5.07	0%	563.07	6%
R90	564.00	7.24	0%	571.24	6%
R91	564.00	7.01	0%	571.01	6%
R92	560.00	4.08	0%	564.08	6%
R93	560.00	3.51	0%	563.51	6%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	558.00	11.70	0%	569.70	6%
R95	560.00	6.38	0%	566.38	6%
R96	562.00	15.11	0%	577.11	6%
R97	564.00	6.34	0%	570.34	6%
R98	564.00	8.53	0%	572.53	6%
R99	564.00	6.94	0%	570.94	6%
R100	560.00	3.85	0%	563.85	6%
R101	560.00	4.00	0%	564.00	6%
R102	554.00	3.94	0%	557.94	6%
R103	560.00	6.44	0%	566.44	6%
R104	560.00	3.47	0%	563.47	6%
R105	560.00	6.51	0%	566.51	6%
R106	560.00	6.93	0%	566.93	6%
R107	562.00	18.70	0%	580.70	6%
R108	558.00	20.24	0%	578.24	6%
R109	564.00	6.71	0%	570.71	6%
R110	564.00	6.76	0%	570.76	6%
R111	564.00	6.25	0%	570.25	6%
R112	560.00	5.85	0%	565.85	6%
R113	564.00	5.84	0%	569.84	6%
R114	564.00	5.90	0%	569.90	6%
R115	558.00	4.79	0%	562.79	6%
R116	522.00	19.01	0%	541.01	5%
R117	560.00	6.18	0%	566.18	6%
R118	560.00	6.18	0%	566.18	6%
R119	564.00	6.09	0%	570.09	6%
R120	560.00	6.16	0%	566.16	6%
R121	564.00	7.24	0%	571.24	6%
R122	564.00	7.29	0%	571.29	6%
R123	564.00	7.26	0%	571.26	6%
R124	564.00	7.18	0%	571.18	6%
R125	564.00	7.72	0%	571.72	6%
R126	564.00	7.74	0%	571.74	6%
R127	564.00	7.76	0%	571.76	6%
R128	564.00	7.78	0%	571.78	6%
R129	564.00	7.97	0%	571.97	6%
R130	564.00	7.96	0%	571.96	6%
R131	564.00	7.95	0%	571.95	6%
R132	564.00	7.94	0%	571.94	6%
R133	564.00	7.93	0%	571.93	6%
R134	564.00	7.92	0%	571.92	6%
R135	564.00	7.91	0%	571.91	6%
R136	564.00	7.99	0%	571.99	6%
R137	564.00	7.98	0%	571.98	6%
R138	564.00	7.98	0%	571.98	6%
R139	564.00	7.96	0%	571.96	6%
R140	564.00	7.96	0%	571.96	6%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL	
R141	564.00	7.95	0%	571.95	6%
R142	564.00	7.95	0%	571.95	6%
R143	564.00	7.94	0%	571.94	6%
R144	564.00	7.93	0%	571.93	6%
R145	564.00	7.17	0%	571.17	6%
R146	564.00	7.19	0%	571.19	6%
R147	564.00	7.23	0%	571.23	6%
R148	564.00	7.26	0%	571.26	6%
R149	564.00	7.30	0%	571.30	6%
R150	564.00	7.30	0%	571.30	6%
R151	564.00	7.32	0%	571.32	6%
R152	564.00	7.34	0%	571.34	6%
R153	564.00	7.33	0%	571.33	6%
R154	564.00	7.28	0%	571.28	6%
R155	564.00	7.24	0%	571.24	6%
R156	564.00	7.21	0%	571.21	6%
R157	564.00	7.20	0%	571.20	6%
R158	564.00	7.20	0%	571.20	6%
R159	564.00	7.22	0%	571.22	6%
R160	564.00	7.81	0%	571.81	6%
R161	564.00	7.83	0%	571.83	6%
R162	564.00	7.88	0%	571.88	6%
R163	564.00	7.88	0%	571.88	6%
R164	564.00	7.84	0%	571.84	6%
R165	564.00	7.89	0%	571.89	6%
R166	564.00	7.90	0%	571.90	6%
R167	564.00	7.85	0%	571.85	6%
R168	564.00	7.90	0%	571.90	6%
R169	564.00	7.92	0%	571.92	6%
R170	564.00	7.86	0%	571.86	6%
R171	564.00	7.87	0%	571.87	6%
R172	564.00	7.90	0%	571.90	6%
R173	564.00	7.87	0%	571.87	6%
R174	564.00	7.88	0%	571.88	6%
R175	564.00	7.88	0%	571.88	6%
R176	564.00	7.89	0%	571.89	6%
R177	564.00	7.90	0%	571.90	6%
R178	564.00	7.91	0%	571.91	6%
R179	564.00	7.80	0%	571.80	6%
R180	564.00	7.81	0%	571.81	6%
R181	564.00	7.82	0%	571.82	6%
R182	564.00	7.83	0%	571.83	6%
R183	564.00	7.84	0%	571.84	6%
R184	564.00	7.85	0%	571.85	6%
R185	564.00	7.85	0%	571.85	6%
R186	564.00	7.87	0%	571.87	6%
R187	564.00	7.87	0%	571.87	6%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	564.00	7.88	0%	571.88	6%
R189	564.00	7.89	0%	571.89	6%
R190	564.00	7.89	0%	571.89	6%
R191	564.00	7.81	0%	571.81	6%
R192	564.00	7.03	0%	571.03	6%
R193	564.00	7.02	0%	571.02	6%
R194	564.00	7.02	0%	571.02	6%
R195	564.00	7.01	0%	571.01	6%
R196	564.00	7.02	0%	571.02	6%
R197	564.00	7.01	0%	571.01	6%
R198	564.00	7.02	0%	571.02	6%
R199	564.00	7.01	0%	571.01	6%
R200	564.00	7.12	0%	571.12	6%
R201	564.00	7.11	0%	571.11	6%
R202	564.00	7.10	0%	571.10	6%
R203	564.00	7.13	0%	571.13	6%
R204	564.00	7.12	0%	571.12	6%
R205	564.00	7.10	0%	571.10	6%
R206	564.00	7.08	0%	571.08	6%
R207	564.00	7.07	0%	571.07	6%
R208	564.00	7.06	0%	571.06	6%
R209	564.00	7.08	0%	571.08	6%
R210	564.00	7.05	0%	571.05	6%
R211	564.00	7.07	0%	571.07	6%
R212	564.00	7.06	0%	571.06	6%
R213	564.00	7.04	0%	571.04	6%
R214	560.00	6.95	0%	566.95	6%
R215	560.00	6.95	0%	566.95	6%
R216	560.00	6.94	0%	566.94	6%
R217	560.00	6.93	0%	566.93	6%
R218	560.00	6.92	0%	566.92	6%
R219	560.00	6.90	0%	566.90	6%
R220	560.00	6.89	0%	566.89	6%
R221	560.00	6.93	0%	566.93	6%
R222	560.00	6.94	0%	566.94	6%
R223	560.00	6.95	0%	566.95	6%
R224	560.00	6.97	0%	566.97	6%
R225	560.00	6.86	0%	566.86	6%
R226	560.00	6.85	0%	566.85	6%
R227	560.00	6.83	0%	566.83	6%
R228	560.00	6.81	0%	566.81	6%
R229	560.00	6.69	0%	566.69	6%
R230	560.00	6.66	0%	566.66	6%
R231	560.00	6.62	0%	566.62	6%
R232	560.00	6.64	0%	566.64	6%
R233	560.00	6.66	0%	566.66	6%
R234	560.00	6.69	0%	566.69	6%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	560.00	6.70	0%	566.70	6%
R236	560.00	6.71	0%	566.71	6%
R237	560.00	6.73	0%	566.73	6%
R238	560.00	6.74	0%	566.74	6%
R239	560.00	6.75	0%	566.75	6%
R240	560.00	6.79	0%	566.79	6%
R241	560.00	6.77	0%	566.77	6%
R242	560.00	6.78	0%	566.78	6%
R243	560.00	6.78	0%	566.78	6%
R244	560.00	6.79	0%	566.79	6%
R245	560.00	6.78	0%	566.78	6%
R246	560.00	6.78	0%	566.78	6%
R247	560.00	6.77	0%	566.77	6%
R248	560.00	6.78	0%	566.78	6%
R249	560.00	6.78	0%	566.78	6%
R250	560.00	6.79	0%	566.79	6%
R251	560.00	6.78	0%	566.78	6%
R252	560.00	6.82	0%	566.82	6%
R253	544.00	5.47	0%	549.47	5%
R254	560.00	4.80	0%	564.80	6%
R255	560.00	4.87	0%	564.87	6%
R256	560.00	4.89	0%	564.89	6%
R257	560.00	4.92	0%	564.92	6%
R258	560.00	4.90	0%	564.90	6%
R259	560.00	4.88	0%	564.88	6%
R260	560.00	4.90	0%	564.90	6%
R261	560.00	4.93	0%	564.93	6%
R262	560.00	4.91	0%	564.91	6%
R263	560.00	4.58	0%	564.58	6%
R264	560.00	4.60	0%	564.60	6%
R265	560.00	4.60	0%	564.60	6%
R266	560.00	4.60	0%	564.60	6%
R267	560.00	4.60	0%	564.60	6%
R268	560.00	4.60	0%	564.60	6%
R269	560.00	4.60	0%	564.60	6%
R270	560.00	4.60	0%	564.60	6%
R271	560.00	4.60	0%	564.60	6%
R272	560.00	4.60	0%	564.60	6%
R273	560.00	4.60	0%	564.60	6%
R274	560.00	4.60	0%	564.60	6%
R275	560.00	4.60	0%	564.60	6%
R276	560.00	4.60	0%	564.60	6%
R277	560.00	4.60	0%	564.60	6%
R278	560.00	4.60	0%	564.60	6%
R279	560.00	4.60	0%	564.60	6%
R280	560.00	4.60	0%	564.60	6%
R281	560.00	4.60	0%	564.60	6%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	560.00	4.60	0%	564.60	6%
R283	560.00	4.59	0%	564.59	6%
R284	560.00	4.81	0%	564.81	6%
R285	560.00	4.81	0%	564.81	6%
R286	560.00	4.81	0%	564.81	6%
R287	560.00	4.81	0%	564.81	6%
R288	560.00	4.81	0%	564.81	6%
R289	560.00	4.81	0%	564.81	6%
R290	560.00	4.81	0%	564.81	6%
R291	560.00	4.81	0%	564.81	6%
R292	560.00	4.81	0%	564.81	6%
R293	560.00	4.81	0%	564.81	6%
R294	560.00	4.81	0%	564.81	6%
R295	558.00	4.64	0%	562.64	6%
R296	564.00	5.39	0%	569.39	6%
R297	564.00	6.52	0%	570.52	6%
R298	564.00	6.67	0%	570.67	6%
R299	562.00	10.45	0%	572.45	6%
R300	562.00	10.55	0%	572.55	6%
R301	560.00	3.32	0%	563.32	6%
R302	560.00	3.49	0%	563.49	6%
R303	558.00	4.49	0%	562.49	6%
R304	560.00	3.31	0%	563.31	6%
R305	560.00	8.07	0%	568.07	6%
R306	564.00	8.51	0%	572.51	6%
R307	558.00	8.40	0%	566.40	6%
R308	564.00	4.71	0%	568.71	6%
R309	564.00	6.41	0%	570.41	6%
R310	564.00	3.27	0%	567.27	6%
R311	562.00	10.54	0%	572.54	6%
R312	562.00	10.52	0%	572.52	6%
R313	562.00	10.51	0%	572.51	6%
R314	562.00	10.49	0%	572.49	6%
R315	562.00	10.47	0%	572.47	6%
R316	558.00	4.10	0%	562.10	6%
R317	560.00	3.32	0%	563.32	6%
R318	564.00	4.36	0%	568.36	6%
R319	564.00	5.75	0%	569.75	6%
R320	526.00	4.39	0%	530.39	5%
R321	526.00	3.50	0%	529.50	5%
R322	526.00	3.81	0%	529.81	5%
R323	526.00	3.54	0%	529.54	5%
R324	504.00	3.08	0%	507.08	5%
R325	526.00	3.49	0%	529.49	5%
R326	520.00	3.39	0%	523.39	5%
R327	520.00	3.17	0%	523.17	5%
R328	520.00	2.74	0%	522.74	5%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PEC</b>	<b>%PEC of AQAL</b>	
R329	502.00		2.53	0%	504.53	5%
R330	504.00		3.07	0%	507.07	5%
R331	538.00		3.35	0%	541.35	5%
R332	538.00		3.20	0%	541.20	5%
R333	500.00		2.23	0%	502.23	5%
R334	500.00		2.21	0%	502.21	5%
R335	500.00		2.10	0%	502.10	5%
R336	538.00		3.53	0%	541.53	5%
R337	538.00		3.15	0%	541.15	5%
R338	538.00		3.26	0%	541.26	5%

**Table 8B.H10 Modelled 1-hour Mean CO Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	542.00	15.20	0.1%	557.20	1.9%
R2	522.00	21.37	0.1%	543.37	1.8%
R3	522.00	20.48	0.1%	542.48	1.8%
R4	522.00	14.78	0.0%	536.78	1.8%
R5	522.00	23.36	0.1%	545.36	1.8%
R6	512.00	24.64	0.1%	536.64	1.8%
R7	512.00	20.07	0.1%	532.07	1.8%
R8	558.00	15.26	0.1%	573.26	1.9%
R9	558.00	12.88	0.0%	570.88	1.9%
R10	558.00	10.51	0.0%	568.51	1.9%
R11	558.00	12.32	0.0%	570.32	1.9%
R12	560.00	8.56	0.0%	568.56	1.9%
R13	558.00	9.17	0.0%	567.17	1.9%
R14	542.00	11.20	0.0%	553.20	1.8%
R15	512.00	12.54	0.0%	524.54	1.7%
R16	524.00	14.32	0.0%	538.32	1.8%
R17	562.00	16.87	0.1%	578.87	1.9%
R18	562.00	15.07	0.1%	577.07	1.9%
R19	562.00	14.85	0.0%	576.85	1.9%
R20	562.00	16.41	0.1%	578.41	1.9%
R21	562.00	15.54	0.1%	577.54	1.9%
R22	562.00	13.25	0.0%	575.25	1.9%
R23	562.00	13.02	0.0%	575.02	1.9%
R24	562.00	12.27	0.0%	574.27	1.9%
R26	562.00	12.04	0.0%	574.04	1.9%
R27	562.00	14.17	0.0%	576.17	1.9%
R28	562.00	9.44	0.0%	571.44	1.9%
R29	562.00	13.55	0.0%	575.55	1.9%
R30	544.00	11.07	0.0%	555.07	1.9%
R31	544.00	11.19	0.0%	555.19	1.9%
R32	544.00	11.15	0.0%	555.15	1.9%
R33	544.00	10.63	0.0%	554.63	1.8%
R34	524.00	9.78	0.0%	533.78	1.8%
R35	562.00	10.54	0.0%	572.54	1.9%
R36	562.00	10.60	0.0%	572.60	1.9%
R37	562.00	9.74	0.0%	571.74	1.9%
R38	562.00	11.20	0.0%	573.20	1.9%
R39	562.00	11.89	0.0%	573.89	1.9%
R40	562.00	11.58	0.0%	573.58	1.9%
R41	562.00	11.20	0.0%	573.20	1.9%
R42	562.00	11.10	0.0%	573.10	1.9%
R43	562.00	10.97	0.0%	572.97	1.9%
R44	562.00	10.11	0.0%	572.11	1.9%
R45	564.00	8.53	0.0%	572.53	1.9%
R46	564.00	9.63	0.0%	573.63	1.9%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	564.00	8.94	0.0%	572.94	1.9%
R48	564.00	8.36	0.0%	572.36	1.9%
R49	564.00	8.34	0.0%	572.34	1.9%
R50	564.00	7.34	0.0%	571.34	1.9%
R51	564.00	6.89	0.0%	570.89	1.9%
R52	564.00	6.85	0.0%	570.85	1.9%
R53	564.00	7.39	0.0%	571.39	1.9%
R54	560.00	8.38	0.0%	568.38	1.9%
R55	564.00	8.08	0.0%	572.08	1.9%
R56	564.00	9.51	0.0%	573.51	1.9%
R57	562.00	12.01	0.0%	574.01	1.9%
R58	562.00	12.47	0.0%	574.47	1.9%
R59	558.00	12.77	0.0%	570.77	1.9%
R60	560.00	9.19	0.0%	569.19	1.9%
R61	564.00	11.25	0.0%	575.25	1.9%
R62	564.00	10.19	0.0%	574.19	1.9%
R63	564.00	9.78	0.0%	573.78	1.9%
R64	564.00	9.19	0.0%	573.19	1.9%
R65	564.00	8.58	0.0%	572.58	1.9%
R66	564.00	8.07	0.0%	572.07	1.9%
R67	504.00	8.55	0.0%	512.55	1.7%
R68	502.00	9.98	0.0%	511.98	1.7%
R69	512.00	13.94	0.0%	525.94	1.8%
R70	482.00	6.87	0.0%	488.87	1.6%
R71	512.00	7.93	0.0%	519.93	1.7%
R72	564.00	8.58	0.0%	572.58	1.9%
R73	564.00	8.73	0.0%	572.73	1.9%
R74	564.00	7.21	0.0%	571.21	1.9%
R75	554.00	6.63	0.0%	560.63	1.9%
R76	554.00	9.58	0.0%	563.58	1.9%
R77	512.00	10.97	0.0%	522.97	1.7%
R78	522.00	21.00	0.1%	543.00	1.8%
R79	562.00	18.06	0.1%	580.06	1.9%
R80	564.00	8.10	0.0%	572.10	1.9%
R81	564.00	8.45	0.0%	572.45	1.9%
R82	562.00	11.07	0.0%	573.07	1.9%
R83	522.00	19.79	0.1%	541.79	1.8%
R84	562.00	18.93	0.1%	580.93	1.9%
R85	562.00	17.92	0.1%	579.92	1.9%
R86	562.00	21.61	0.1%	583.61	1.9%
R87	564.00	8.21	0.0%	572.21	1.9%
R88	562.00	13.38	0.0%	575.38	1.9%
R89	558.00	7.04	0.0%	565.04	1.9%
R90	564.00	8.37	0.0%	572.37	1.9%
R91	564.00	8.20	0.0%	572.20	1.9%
R92	560.00	7.29	0.0%	567.29	1.9%
R93	560.00	6.37	0.0%	566.37	1.9%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	558.00	13.09	0.0%	571.09	1.9%
R95	560.00	8.18	0.0%	568.18	1.9%
R96	562.00	18.59	0.1%	580.59	1.9%
R97	564.00	8.18	0.0%	572.18	1.9%
R98	564.00	9.64	0.0%	573.64	1.9%
R99	564.00	8.23	0.0%	572.23	1.9%
R100	560.00	6.88	0.0%	566.88	1.9%
R101	560.00	7.08	0.0%	567.08	1.9%
R102	554.00	6.67	0.0%	560.67	1.9%
R103	560.00	8.57	0.0%	568.57	1.9%
R104	560.00	6.47	0.0%	566.47	1.9%
R105	560.00	8.36	0.0%	568.36	1.9%
R106	560.00	8.95	0.0%	568.95	1.9%
R107	562.00	21.62	0.1%	583.62	1.9%
R108	558.00	30.85	0.1%	588.85	2.0%
R109	564.00	8.03	0.0%	572.03	1.9%
R110	564.00	8.68	0.0%	572.68	1.9%
R111	564.00	7.49	0.0%	571.49	1.9%
R112	560.00	7.50	0.0%	567.50	1.9%
R113	564.00	7.14	0.0%	571.14	1.9%
R114	564.00	7.22	0.0%	571.22	1.9%
R115	558.00	7.37	0.0%	565.37	1.9%
R116	522.00	24.75	0.1%	546.75	1.8%
R117	560.00	7.72	0.0%	567.72	1.9%
R118	560.00	7.77	0.0%	567.77	1.9%
R119	564.00	7.53	0.0%	571.53	1.9%
R120	560.00	7.80	0.0%	567.80	1.9%
R121	564.00	8.45	0.0%	572.45	1.9%
R122	564.00	8.50	0.0%	572.50	1.9%
R123	564.00	8.46	0.0%	572.46	1.9%
R124	564.00	8.36	0.0%	572.36	1.9%
R125	564.00	9.13	0.0%	573.13	1.9%
R126	564.00	9.14	0.0%	573.14	1.9%
R127	564.00	9.17	0.0%	573.17	1.9%
R128	564.00	9.17	0.0%	573.17	1.9%
R129	564.00	9.46	0.0%	573.46	1.9%
R130	564.00	9.44	0.0%	573.44	1.9%
R131	564.00	9.38	0.0%	573.38	1.9%
R132	564.00	9.36	0.0%	573.36	1.9%
R133	564.00	9.34	0.0%	573.34	1.9%
R134	564.00	9.32	0.0%	573.32	1.9%
R135	564.00	9.30	0.0%	573.30	1.9%
R136	564.00	9.48	0.0%	573.48	1.9%
R137	564.00	9.45	0.0%	573.45	1.9%
R138	564.00	9.44	0.0%	573.44	1.9%
R139	564.00	9.41	0.0%	573.41	1.9%
R140	564.00	9.38	0.0%	573.38	1.9%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	564.00	9.37	0.0%	573.37	1.9%
R142	564.00	9.35	0.0%	573.35	1.9%
R143	564.00	9.33	0.0%	573.33	1.9%
R144	564.00	9.32	0.0%	573.32	1.9%
R145	564.00	8.37	0.0%	572.37	1.9%
R146	564.00	8.40	0.0%	572.40	1.9%
R147	564.00	8.44	0.0%	572.44	1.9%
R148	564.00	8.47	0.0%	572.47	1.9%
R149	564.00	8.51	0.0%	572.51	1.9%
R150	564.00	8.51	0.0%	572.51	1.9%
R151	564.00	8.52	0.0%	572.52	1.9%
R152	564.00	8.55	0.0%	572.55	1.9%
R153	564.00	8.54	0.0%	572.54	1.9%
R154	564.00	8.48	0.0%	572.48	1.9%
R155	564.00	8.43	0.0%	572.43	1.9%
R156	564.00	8.39	0.0%	572.39	1.9%
R157	564.00	8.37	0.0%	572.37	1.9%
R158	564.00	8.39	0.0%	572.39	1.9%
R159	564.00	8.42	0.0%	572.42	1.9%
R160	564.00	8.98	0.0%	572.98	1.9%
R161	564.00	9.01	0.0%	573.01	1.9%
R162	564.00	9.07	0.0%	573.07	1.9%
R163	564.00	9.08	0.0%	573.08	1.9%
R164	564.00	9.02	0.0%	573.02	1.9%
R165	564.00	9.09	0.0%	573.09	1.9%
R166	564.00	9.10	0.0%	573.10	1.9%
R167	564.00	9.04	0.0%	573.04	1.9%
R168	564.00	9.11	0.0%	573.11	1.9%
R169	564.00	9.13	0.0%	573.13	1.9%
R170	564.00	9.05	0.0%	573.05	1.9%
R171	564.00	9.06	0.0%	573.06	1.9%
R172	564.00	9.12	0.0%	573.12	1.9%
R173	564.00	9.07	0.0%	573.07	1.9%
R174	564.00	9.08	0.0%	573.08	1.9%
R175	564.00	9.09	0.0%	573.09	1.9%
R176	564.00	9.10	0.0%	573.10	1.9%
R177	564.00	9.11	0.0%	573.11	1.9%
R178	564.00	9.12	0.0%	573.12	1.9%
R179	564.00	8.98	0.0%	572.98	1.9%
R180	564.00	8.99	0.0%	572.99	1.9%
R181	564.00	9.00	0.0%	573.00	1.9%
R182	564.00	9.02	0.0%	573.02	1.9%
R183	564.00	9.02	0.0%	573.02	1.9%
R184	564.00	9.04	0.0%	573.04	1.9%
R185	564.00	9.05	0.0%	573.05	1.9%
R186	564.00	9.07	0.0%	573.07	1.9%
R187	564.00	9.08	0.0%	573.08	1.9%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	564.00	9.09	0.0%	573.09	1.9%
R189	564.00	9.10	0.0%	573.10	1.9%
R190	564.00	9.11	0.0%	573.11	1.9%
R191	564.00	8.99	0.0%	572.99	1.9%
R192	564.00	8.95	0.0%	572.95	1.9%
R193	564.00	8.95	0.0%	572.95	1.9%
R194	564.00	8.95	0.0%	572.95	1.9%
R195	564.00	8.95	0.0%	572.95	1.9%
R196	564.00	8.96	0.0%	572.96	1.9%
R197	564.00	8.95	0.0%	572.95	1.9%
R198	564.00	8.94	0.0%	572.94	1.9%
R199	564.00	8.94	0.0%	572.94	1.9%
R200	564.00	8.97	0.0%	572.97	1.9%
R201	564.00	8.96	0.0%	572.96	1.9%
R202	564.00	8.94	0.0%	572.94	1.9%
R203	564.00	8.98	0.0%	572.98	1.9%
R204	564.00	8.97	0.0%	572.97	1.9%
R205	564.00	8.96	0.0%	572.96	1.9%
R206	564.00	8.92	0.0%	572.92	1.9%
R207	564.00	8.91	0.0%	572.91	1.9%
R208	564.00	8.90	0.0%	572.90	1.9%
R209	564.00	8.93	0.0%	572.93	1.9%
R210	564.00	8.89	0.0%	572.89	1.9%
R211	564.00	8.94	0.0%	572.94	1.9%
R212	564.00	8.93	0.0%	572.93	1.9%
R213	564.00	8.91	0.0%	572.91	1.9%
R214	560.00	8.73	0.0%	568.73	1.9%
R215	560.00	8.73	0.0%	568.73	1.9%
R216	560.00	8.73	0.0%	568.73	1.9%
R217	560.00	8.72	0.0%	568.72	1.9%
R218	560.00	8.71	0.0%	568.71	1.9%
R219	560.00	8.68	0.0%	568.68	1.9%
R220	560.00	8.66	0.0%	568.66	1.9%
R221	560.00	8.72	0.0%	568.72	1.9%
R222	560.00	8.74	0.0%	568.74	1.9%
R223	560.00	8.76	0.0%	568.76	1.9%
R224	560.00	8.78	0.0%	568.78	1.9%
R225	560.00	8.63	0.0%	568.63	1.9%
R226	560.00	8.61	0.0%	568.61	1.9%
R227	560.00	8.58	0.0%	568.58	1.9%
R228	560.00	8.58	0.0%	568.58	1.9%
R229	560.00	8.70	0.0%	568.70	1.9%
R230	560.00	8.67	0.0%	568.67	1.9%
R231	560.00	8.62	0.0%	568.62	1.9%
R232	560.00	8.65	0.0%	568.65	1.9%
R233	560.00	8.64	0.0%	568.64	1.9%
R234	560.00	8.65	0.0%	568.65	1.9%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	560.00	8.64	0.0%	568.64	1.9%
R236	560.00	8.64	0.0%	568.64	1.9%
R237	560.00	8.62	0.0%	568.62	1.9%
R238	560.00	8.62	0.0%	568.62	1.9%
R239	560.00	8.59	0.0%	568.59	1.9%
R240	560.00	8.56	0.0%	568.56	1.9%
R241	560.00	8.56	0.0%	568.56	1.9%
R242	560.00	8.54	0.0%	568.54	1.9%
R243	560.00	8.52	0.0%	568.52	1.9%
R244	560.00	8.52	0.0%	568.52	1.9%
R245	560.00	8.52	0.0%	568.52	1.9%
R246	560.00	8.52	0.0%	568.52	1.9%
R247	560.00	8.50	0.0%	568.50	1.9%
R248	560.00	8.51	0.0%	568.51	1.9%
R249	560.00	8.51	0.0%	568.51	1.9%
R250	560.00	8.53	0.0%	568.53	1.9%
R251	560.00	8.51	0.0%	568.51	1.9%
R252	560.00	8.56	0.0%	568.56	1.9%
R253	544.00	9.19	0.0%	553.19	1.8%
R254	560.00	6.83	0.0%	566.83	1.9%
R255	560.00	6.90	0.0%	566.90	1.9%
R256	560.00	6.93	0.0%	566.93	1.9%
R257	560.00	6.95	0.0%	566.95	1.9%
R258	560.00	6.91	0.0%	566.91	1.9%
R259	560.00	6.91	0.0%	566.91	1.9%
R260	560.00	6.95	0.0%	566.95	1.9%
R261	560.00	6.97	0.0%	566.97	1.9%
R262	560.00	6.92	0.0%	566.92	1.9%
R263	560.00	6.56	0.0%	566.56	1.9%
R264	560.00	6.59	0.0%	566.59	1.9%
R265	560.00	6.59	0.0%	566.59	1.9%
R266	560.00	6.59	0.0%	566.59	1.9%
R267	560.00	6.59	0.0%	566.59	1.9%
R268	560.00	6.59	0.0%	566.59	1.9%
R269	560.00	6.59	0.0%	566.59	1.9%
R270	560.00	6.59	0.0%	566.59	1.9%
R271	560.00	6.59	0.0%	566.59	1.9%
R272	560.00	6.59	0.0%	566.59	1.9%
R273	560.00	6.59	0.0%	566.59	1.9%
R274	560.00	6.59	0.0%	566.59	1.9%
R275	560.00	6.59	0.0%	566.59	1.9%
R276	560.00	6.59	0.0%	566.59	1.9%
R277	560.00	6.59	0.0%	566.59	1.9%
R278	560.00	6.59	0.0%	566.59	1.9%
R279	560.00	6.59	0.0%	566.59	1.9%
R280	560.00	6.59	0.0%	566.59	1.9%
R281	560.00	6.59	0.0%	566.59	1.9%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	560.00	6.59	0.0%	566.59	1.9%
R283	560.00	6.58	0.0%	566.58	1.9%
R284	560.00	6.83	0.0%	566.83	1.9%
R285	560.00	6.83	0.0%	566.83	1.9%
R286	560.00	6.83	0.0%	566.83	1.9%
R287	560.00	6.83	0.0%	566.83	1.9%
R288	560.00	6.83	0.0%	566.83	1.9%
R289	560.00	6.83	0.0%	566.83	1.9%
R290	560.00	6.83	0.0%	566.83	1.9%
R291	560.00	6.83	0.0%	566.83	1.9%
R292	560.00	6.83	0.0%	566.83	1.9%
R293	560.00	6.83	0.0%	566.83	1.9%
R294	560.00	6.83	0.0%	566.83	1.9%
R295	558.00	7.61	0.0%	565.61	1.9%
R296	564.00	7.99	0.0%	571.99	1.9%
R297	564.00	8.43	0.0%	572.43	1.9%
R298	564.00	8.46	0.0%	572.46	1.9%
R299	562.00	11.34	0.0%	573.34	1.9%
R300	562.00	11.42	0.0%	573.42	1.9%
R301	560.00	6.25	0.0%	566.25	1.9%
R302	560.00	6.58	0.0%	566.58	1.9%
R303	558.00	6.70	0.0%	564.70	1.9%
R304	560.00	6.33	0.0%	566.33	1.9%
R305	560.00	9.67	0.0%	569.67	1.9%
R306	564.00	10.69	0.0%	574.69	1.9%
R307	558.00	10.77	0.0%	568.77	1.9%
R308	564.00	7.87	0.0%	571.87	1.9%
R309	564.00	8.49	0.0%	572.49	1.9%
R310	564.00	6.14	0.0%	570.14	1.9%
R311	562.00	11.42	0.0%	573.42	1.9%
R312	562.00	11.41	0.0%	573.41	1.9%
R313	562.00	11.40	0.0%	573.40	1.9%
R314	562.00	11.38	0.0%	573.38	1.9%
R315	562.00	11.37	0.0%	573.37	1.9%
R316	558.00	7.20	0.0%	565.20	1.9%
R317	560.00	6.36	0.0%	566.36	1.9%
R318	564.00	7.32	0.0%	571.32	1.9%
R319	564.00	7.31	0.0%	571.31	1.9%
R320	526.00	9.36	0.0%	535.36	1.8%
R321	526.00	7.21	0.0%	533.21	1.8%
R322	526.00	8.87	0.0%	534.87	1.8%
R323	526.00	7.67	0.0%	533.67	1.8%
R324	504.00	6.89	0.0%	510.89	1.7%
R325	526.00	8.10	0.0%	534.10	1.8%
R326	520.00	7.43	0.0%	527.43	1.8%
R327	520.00	6.87	0.0%	526.87	1.8%
R328	520.00	6.67	0.0%	526.67	1.8%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
R329	502.00	7.20	0.0%	509.20	1.7%
R330	504.00	5.96	0.0%	509.96	1.7%
R331	538.00	6.78	0.0%	544.78	1.8%
R332	538.00	6.47	0.0%	544.47	1.8%
R333	500.00	4.32	0.0%	504.32	1.7%
R334	500.00	4.20	0.0%	504.20	1.7%
R335	500.00	4.22	0.0%	504.22	1.7%
R336	538.00	7.08	0.0%	545.08	1.8%
R337	538.00	7.09	0.0%	545.09	1.8%
R338	538.00	6.96	0.0%	544.96	1.8%

**Table 8B.H11 Modelled Daily Mean SO<sub>2</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	3.11	6.02	4.8%	9.13	7.3%
R2	3.25	4.17	3.3%	7.42	5.9%
R3	3.25	7.58	6.1%	10.84	8.7%
R4	3.25	8.52	6.8%	11.78	9.4%
R5	3.25	20.23	16.2%	23.48	18.8%
R6	3.01	13.94	11.2%	16.95	13.6%
R7	3.01	14.24	11.4%	17.25	13.8%
R8	4.35	6.15	4.9%	10.50	8.4%
R9	4.35	7.34	5.9%	11.69	9.4%
R10	4.35	5.62	4.5%	9.96	8.0%
R11	4.35	7.25	5.8%	11.60	9.3%
R12	3.46	5.44	4.4%	8.90	7.1%
R13	4.35	4.75	3.8%	9.09	7.3%
R14	3.11	6.16	4.9%	9.26	7.4%
R15	3.01	6.85	5.5%	9.86	7.9%
R16	2.65	7.94	6.4%	10.60	8.5%
R17	3.85	8.82	7.1%	12.67	10.1%
R18	3.85	9.11	7.3%	12.97	10.4%
R19	3.85	9.81	7.9%	13.67	10.9%
R20	3.85	12.19	9.7%	16.04	12.8%
R21	3.85	11.11	8.9%	14.97	12.0%
R22	3.85	9.41	7.5%	13.26	10.6%
R23	3.85	8.79	7.0%	12.64	10.1%
R24	3.85	8.42	6.7%	12.27	9.8%
R26	3.85	8.31	6.7%	12.17	9.7%
R27	3.85	9.04	7.2%	12.89	10.3%
R28	3.85	8.03	6.4%	11.89	9.5%
R29	3.85	12.09	9.7%	15.94	12.8%
R30	2.68	4.52	3.6%	7.20	5.8%
R31	2.68	4.62	3.7%	7.30	5.8%
R32	2.68	4.49	3.6%	7.17	5.7%
R33	2.68	5.53	4.4%	8.21	6.6%
R34	2.65	5.24	4.2%	7.90	6.3%
R35	3.85	5.73	4.6%	9.58	7.7%
R36	3.85	6.96	5.6%	10.82	8.7%
R37	3.85	6.53	5.2%	10.38	8.3%
R38	3.85	7.04	5.6%	10.89	8.7%
R39	3.85	7.23	5.8%	11.09	8.9%
R40	3.85	8.23	6.6%	12.09	9.7%
R41	3.85	7.69	6.2%	11.54	9.2%
R42	3.85	7.86	6.3%	11.72	9.4%
R43	3.85	8.76	7.0%	12.61	10.1%
R44	3.85	9.23	7.4%	13.08	10.5%
R45	3.73	7.59	6.1%	11.32	9.1%
R46	3.73	8.83	7.1%	12.56	10.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	3.73	8.54	6.8%	12.28	9.8%
R48	3.73	7.89	6.3%	11.62	9.3%
R49	3.73	7.85	6.3%	11.58	9.3%
R50	3.73	6.84	5.5%	10.57	8.5%
R51	3.73	5.93	4.7%	9.66	7.7%
R52	3.73	5.37	4.3%	9.10	7.3%
R53	3.73	5.72	4.6%	9.45	7.6%
R54	3.46	6.03	4.8%	9.49	7.6%
R55	3.73	7.52	6.0%	11.25	9.0%
R56	3.73	8.83	7.1%	12.56	10.0%
R57	3.85	12.08	9.7%	15.94	12.7%
R58	3.85	12.84	10.3%	16.69	13.4%
R59	4.35	10.87	8.7%	15.21	12.2%
R60	3.46	6.09	4.9%	9.55	7.6%
R61	3.73	10.59	8.5%	14.32	11.5%
R62	3.73	10.08	8.1%	13.81	11.0%
R63	3.73	8.05	6.4%	11.78	9.4%
R64	3.73	8.63	6.9%	12.37	9.9%
R65	3.73	7.85	6.3%	11.59	9.3%
R66	3.73	5.71	4.6%	9.44	7.6%
R67	2.62	5.12	4.1%	7.74	6.2%
R68	2.45	6.11	4.9%	8.56	6.8%
R69	3.01	8.35	6.7%	11.36	9.1%
R70	3.13	1.80	1.4%	4.93	3.9%
R71	3.34	3.17	2.5%	6.51	5.2%
R72	2.84	5.45	4.4%	8.29	6.6%
R73	2.84	4.86	3.9%	7.69	6.2%
R74	3.24	5.08	4.1%	8.32	6.7%
R75	3.68	3.38	2.7%	7.06	5.6%
R76	2.68	3.91	3.1%	6.58	5.3%
R77	3.01	8.12	6.5%	11.13	8.9%
R78	3.25	8.10	6.5%	11.36	9.1%
R79	3.85	16.55	13.2%	20.40	16.3%
R80	3.73	7.55	6.0%	11.28	9.0%
R81	3.73	6.83	5.5%	10.56	8.4%
R82	3.85	9.34	7.5%	13.19	10.6%
R83	3.25	2.52	2.0%	5.78	4.6%
R84	3.85	16.86	13.5%	20.71	16.6%
R85	3.85	16.28	13.0%	20.13	16.1%
R86	3.85	18.67	14.9%	22.53	18.0%
R87	3.73	6.93	5.5%	10.66	8.5%
R88	3.85	10.55	8.4%	14.40	11.5%
R89	4.44	4.43	3.5%	8.87	7.1%
R90	3.73	7.90	6.3%	11.63	9.3%
R91	3.73	7.63	6.1%	11.36	9.1%
R92	3.69	3.88	3.1%	7.58	6.1%
R93	3.69	3.50	2.8%	7.19	5.8%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	4.35	9.73	7.8%	14.08	11.3%
R95	3.46	5.94	4.8%	9.40	7.5%
R96	3.85	17.15	13.7%	21.00	16.8%
R97	3.73	7.54	6.0%	11.27	9.0%
R98	3.73	8.84	7.1%	12.57	10.1%
R99	3.73	7.66	6.1%	11.39	9.1%
R100	3.69	4.23	3.4%	7.93	6.3%
R101	3.69	4.37	3.5%	8.06	6.5%
R102	3.68	3.33	2.7%	7.01	5.6%
R103	2.84	5.41	4.3%	8.25	6.6%
R104	3.35	3.21	2.6%	6.56	5.3%
R105	3.46	5.28	4.2%	8.73	7.0%
R106	3.46	6.05	4.8%	9.51	7.6%
R107	3.85	18.49	14.8%	22.34	17.9%
R108	4.35	8.47	6.8%	12.82	10.3%
R109	3.73	7.12	5.7%	10.85	8.7%
R110	3.73	6.63	5.3%	10.37	8.3%
R111	3.73	6.76	5.4%	10.49	8.4%
R112	3.46	5.63	4.5%	9.08	7.3%
R113	3.73	6.68	5.3%	10.41	8.3%
R114	3.73	6.76	5.4%	10.49	8.4%
R115	4.44	4.15	3.3%	8.60	6.9%
R116	3.25	12.07	9.7%	15.32	12.3%
R117	3.46	5.82	4.7%	9.28	7.4%
R118	3.46	5.82	4.7%	9.28	7.4%
R119	3.73	7.19	5.8%	10.93	8.7%
R120	3.46	5.80	4.6%	9.25	7.4%
R121	3.73	7.68	6.1%	11.41	9.1%
R122	3.73	7.85	6.3%	11.58	9.3%
R123	3.73	7.58	6.1%	11.32	9.1%
R124	3.73	7.39	5.9%	11.13	8.9%
R125	3.73	8.80	7.0%	12.53	10.0%
R126	3.73	8.83	7.1%	12.56	10.1%
R127	3.73	8.84	7.1%	12.57	10.1%
R128	3.73	8.87	7.1%	12.60	10.1%
R129	3.73	9.31	7.5%	13.05	10.4%
R130	3.73	9.27	7.4%	13.01	10.4%
R131	3.73	9.16	7.3%	12.89	10.3%
R132	3.73	9.12	7.3%	12.85	10.3%
R133	3.73	9.07	7.3%	12.80	10.2%
R134	3.73	9.03	7.2%	12.76	10.2%
R135	3.73	9.01	7.2%	12.75	10.2%
R136	3.73	9.34	7.5%	13.07	10.5%
R137	3.73	9.26	7.4%	13.00	10.4%
R138	3.73	9.25	7.4%	12.98	10.4%
R139	3.73	9.18	7.3%	12.92	10.3%
R140	3.73	9.13	7.3%	12.87	10.3%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	3.73	9.12	7.3%	12.85	10.3%
R142	3.73	9.07	7.3%	12.80	10.2%
R143	3.73	9.04	7.2%	12.77	10.2%
R144	3.73	9.02	7.2%	12.76	10.2%
R145	3.73	7.64	6.1%	11.37	9.1%
R146	3.73	7.67	6.1%	11.40	9.1%
R147	3.73	7.69	6.2%	11.43	9.1%
R148	3.73	7.69	6.2%	11.43	9.1%
R149	3.73	7.92	6.3%	11.66	9.3%
R150	3.73	7.96	6.4%	11.69	9.4%
R151	3.73	7.98	6.4%	11.71	9.4%
R152	3.73	8.01	6.4%	11.74	9.4%
R153	3.73	7.93	6.3%	11.66	9.3%
R154	3.73	7.63	6.1%	11.37	9.1%
R155	3.73	7.52	6.0%	11.25	9.0%
R156	3.73	7.43	5.9%	11.16	8.9%
R157	3.73	7.41	5.9%	11.14	8.9%
R158	3.73	7.46	6.0%	11.20	9.0%
R159	3.73	7.54	6.0%	11.27	9.0%
R160	3.73	8.61	6.9%	12.34	9.9%
R161	3.73	8.63	6.9%	12.36	9.9%
R162	3.73	8.69	6.9%	12.42	9.9%
R163	3.73	8.69	7.0%	12.42	9.9%
R164	3.73	8.64	6.9%	12.37	9.9%
R165	3.73	8.70	7.0%	12.43	9.9%
R166	3.73	8.71	7.0%	12.44	10.0%
R167	3.73	8.65	6.9%	12.38	9.9%
R168	3.73	8.71	7.0%	12.45	10.0%
R169	3.73	8.73	7.0%	12.47	10.0%
R170	3.73	8.66	6.9%	12.39	9.9%
R171	3.73	8.67	6.9%	12.41	9.9%
R172	3.73	8.71	7.0%	12.44	10.0%
R173	3.73	8.67	6.9%	12.41	9.9%
R174	3.73	8.68	6.9%	12.42	9.9%
R175	3.73	8.69	6.9%	12.42	9.9%
R176	3.73	8.70	7.0%	12.43	9.9%
R177	3.73	8.71	7.0%	12.44	10.0%
R178	3.73	8.72	7.0%	12.45	10.0%
R179	3.73	8.60	6.9%	12.33	9.9%
R180	3.73	8.61	6.9%	12.34	9.9%
R181	3.73	8.61	6.9%	12.35	9.9%
R182	3.73	8.63	6.9%	12.36	9.9%
R183	3.73	8.63	6.9%	12.37	9.9%
R184	3.73	8.64	6.9%	12.38	9.9%
R185	3.73	8.66	6.9%	12.39	9.9%
R186	3.73	8.67	6.9%	12.40	9.9%
R187	3.73	8.68	6.9%	12.41	9.9%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	3.73	8.69	7.0%	12.42	9.9%
R189	3.73	8.69	7.0%	12.42	9.9%
R190	3.73	8.70	7.0%	12.43	9.9%
R191	3.73	8.61	6.9%	12.35	9.9%
R192	3.73	8.37	6.7%	12.10	9.7%
R193	3.73	8.37	6.7%	12.10	9.7%
R194	3.73	8.36	6.7%	12.09	9.7%
R195	3.73	8.36	6.7%	12.09	9.7%
R196	3.73	8.37	6.7%	12.10	9.7%
R197	3.73	8.36	6.7%	12.09	9.7%
R198	3.73	8.36	6.7%	12.09	9.7%
R199	3.73	8.35	6.7%	12.08	9.7%
R200	3.73	8.46	6.8%	12.19	9.8%
R201	3.73	8.44	6.8%	12.18	9.7%
R202	3.73	8.43	6.7%	12.16	9.7%
R203	3.73	8.46	6.8%	12.19	9.8%
R204	3.73	8.45	6.8%	12.18	9.7%
R205	3.73	8.43	6.7%	12.16	9.7%
R206	3.73	8.40	6.7%	12.14	9.7%
R207	3.73	8.39	6.7%	12.12	9.7%
R208	3.73	8.38	6.7%	12.11	9.7%
R209	3.73	8.41	6.7%	12.14	9.7%
R210	3.73	8.36	6.7%	12.10	9.7%
R211	3.73	8.39	6.7%	12.13	9.7%
R212	3.73	8.38	6.7%	12.11	9.7%
R213	3.73	8.36	6.7%	12.10	9.7%
R214	3.46	6.20	5.0%	9.66	7.7%
R215	3.46	6.19	5.0%	9.65	7.7%
R216	3.46	6.18	4.9%	9.64	7.7%
R217	3.46	6.17	4.9%	9.63	7.7%
R218	3.46	6.15	4.9%	9.61	7.7%
R219	3.46	6.14	4.9%	9.60	7.7%
R220	3.46	6.12	4.9%	9.58	7.7%
R221	3.46	6.14	4.9%	9.60	7.7%
R222	3.46	6.14	4.9%	9.60	7.7%
R223	3.46	6.13	4.9%	9.59	7.7%
R224	3.46	6.14	4.9%	9.60	7.7%
R225	3.46	6.11	4.9%	9.56	7.7%
R226	3.46	6.09	4.9%	9.55	7.6%
R227	3.46	6.08	4.9%	9.54	7.6%
R228	3.46	6.06	4.8%	9.52	7.6%
R229	3.46	5.91	4.7%	9.37	7.5%
R230	3.46	5.88	4.7%	9.34	7.5%
R231	3.46	5.85	4.7%	9.31	7.4%
R232	3.46	5.89	4.7%	9.35	7.5%
R233	3.46	5.91	4.7%	9.37	7.5%
R234	3.46	5.93	4.7%	9.39	7.5%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	3.46	5.95	4.8%	9.41	7.5%
R236	3.46	5.96	4.8%	9.42	7.5%
R237	3.46	5.98	4.8%	9.43	7.5%
R238	3.46	5.99	4.8%	9.45	7.6%
R239	3.46	6.00	4.8%	9.46	7.6%
R240	3.46	6.05	4.8%	9.51	7.6%
R241	3.46	6.03	4.8%	9.49	7.6%
R242	3.46	6.05	4.8%	9.51	7.6%
R243	3.46	6.06	4.8%	9.52	7.6%
R244	3.46	6.07	4.9%	9.53	7.6%
R245	3.46	6.07	4.9%	9.53	7.6%
R246	3.46	6.08	4.9%	9.54	7.6%
R247	3.46	6.08	4.9%	9.54	7.6%
R248	3.46	6.09	4.9%	9.55	7.6%
R249	3.46	6.09	4.9%	9.55	7.6%
R250	3.46	6.09	4.9%	9.55	7.6%
R251	3.46	6.06	4.8%	9.52	7.6%
R252	3.46	6.12	4.9%	9.58	7.7%
R253	3.10	3.79	3.0%	6.89	5.5%
R254	3.46	4.46	3.6%	7.92	6.3%
R255	3.46	4.51	3.6%	7.97	6.4%
R256	3.46	4.53	3.6%	7.99	6.4%
R257	3.46	4.54	3.6%	8.00	6.4%
R258	3.46	4.51	3.6%	7.97	6.4%
R259	3.46	4.52	3.6%	7.98	6.4%
R260	3.46	4.55	3.6%	8.00	6.4%
R261	3.46	4.56	3.6%	8.01	6.4%
R262	3.46	4.52	3.6%	7.98	6.4%
R263	3.46	4.28	3.4%	7.74	6.2%
R264	3.46	4.31	3.5%	7.77	6.2%
R265	3.46	4.31	3.5%	7.77	6.2%
R266	3.46	4.31	3.5%	7.77	6.2%
R267	3.46	4.31	3.5%	7.77	6.2%
R268	3.46	4.31	3.5%	7.77	6.2%
R269	3.46	4.31	3.5%	7.77	6.2%
R270	3.46	4.31	3.5%	7.77	6.2%
R271	3.46	4.31	3.5%	7.77	6.2%
R272	3.46	4.31	3.5%	7.77	6.2%
R273	3.46	4.31	3.5%	7.77	6.2%
R274	3.46	4.31	3.5%	7.77	6.2%
R275	3.46	4.31	3.5%	7.77	6.2%
R276	3.46	4.31	3.5%	7.77	6.2%
R277	3.46	4.31	3.5%	7.77	6.2%
R278	3.46	4.31	3.5%	7.77	6.2%
R279	3.46	4.31	3.5%	7.77	6.2%
R280	3.46	4.31	3.5%	7.77	6.2%
R281	3.46	4.31	3.5%	7.77	6.2%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	3.46	4.31	3.5%	7.77	6.2%
R283	3.46	4.32	3.5%	7.78	6.2%
R284	3.46	4.46	3.6%	7.92	6.3%
R285	3.46	4.46	3.6%	7.92	6.3%
R286	3.46	4.46	3.6%	7.92	6.3%
R287	3.46	4.46	3.6%	7.92	6.3%
R288	3.46	4.46	3.6%	7.92	6.3%
R289	3.46	4.46	3.6%	7.92	6.3%
R290	3.46	4.46	3.6%	7.92	6.3%
R291	3.46	4.46	3.6%	7.92	6.3%
R292	3.46	4.46	3.6%	7.92	6.3%
R293	3.46	4.46	3.6%	7.92	6.3%
R294	3.46	4.46	3.6%	7.92	6.3%
R295	4.44	5.64	4.5%	10.08	8.1%
R296	3.73	5.64	4.5%	9.37	7.5%
R297	3.73	6.63	5.3%	10.36	8.3%
R298	3.73	6.84	5.5%	10.58	8.5%
R299	3.85	12.05	9.6%	15.91	12.7%
R300	3.85	12.17	9.7%	16.02	12.8%
R301	3.69	3.51	2.8%	7.20	5.8%
R302	3.69	3.66	2.9%	7.36	5.9%
R303	4.44	4.92	3.9%	9.37	7.5%
R304	3.69	3.51	2.8%	7.21	5.8%
R305	3.46	7.34	5.9%	10.80	8.6%
R306	3.73	10.12	8.1%	13.86	11.1%
R307	4.35	5.47	4.4%	9.81	7.8%
R308	3.24	4.60	3.7%	7.85	6.3%
R309	3.73	6.50	5.2%	10.23	8.2%
R310	3.13	3.40	2.7%	6.53	5.2%
R311	3.85	12.12	9.7%	15.97	12.8%
R312	3.85	12.08	9.7%	15.93	12.7%
R313	3.85	12.01	9.6%	15.86	12.7%
R314	3.85	12.02	9.6%	15.87	12.7%
R315	3.85	12.06	9.6%	15.91	12.7%
R316	4.44	4.90	3.9%	9.35	7.5%
R317	3.69	3.48	2.8%	7.17	5.7%
R318	3.24	4.31	3.4%	7.55	6.0%
R319	3.73	5.30	4.2%	9.04	7.2%
R320	2.68	3.66	2.9%	6.34	5.1%
R321	2.68	3.01	2.4%	5.69	4.6%
R322	2.68	3.47	2.8%	6.14	4.9%
R323	2.68	2.91	2.3%	5.59	4.5%
R324	2.46	2.41	1.9%	4.87	3.9%
R325	2.68	3.12	2.5%	5.79	4.6%
R326	2.53	2.80	2.2%	5.33	4.3%
R327	2.53	2.55	2.0%	5.08	4.1%
R328	2.53	2.34	1.9%	4.87	3.9%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
R329	2.78	2.11	1.7%	4.89	3.9%
R330	2.46	1.95	1.6%	4.41	3.5%
R331	2.82	2.94	2.4%	5.76	4.6%
R332	2.82	2.71	2.2%	5.54	4.4%
R333	2.80	1.62	1.3%	4.42	3.5%
R334	2.80	1.54	1.2%	4.34	3.5%
R335	2.80	1.56	1.2%	4.35	3.5%
R336	2.82	2.85	2.3%	5.67	4.5%
R337	2.82	2.87	2.3%	5.70	4.6%
R338	2.82	2.95	2.4%	5.77	4.6%

**Table 8B.H12 Modelled 1-hour Mean SO<sub>2</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	3.11	21.47	6.1%	24.57	7.0%
R2	3.25	8.98	2.6%	12.23	3.5%
R3	3.25	25.32	7.2%	28.58	8.2%
R4	3.25	25.53	7.3%	28.79	8.2%
R5	3.25	42.17	12.0%	45.42	13.0%
R6	3.01	37.30	10.7%	40.31	11.5%
R7	3.01	33.00	9.4%	36.01	10.3%
R8	4.35	19.48	5.6%	23.83	6.8%
R9	4.35	21.79	6.2%	26.14	7.5%
R10	4.35	16.22	4.6%	20.56	5.9%
R11	4.35	21.58	6.2%	25.93	7.4%
R12	3.46	12.93	3.7%	16.39	4.7%
R13	4.35	14.31	4.1%	18.66	5.3%
R14	3.11	18.38	5.3%	21.48	6.1%
R15	3.01	20.23	5.8%	23.24	6.6%
R16	2.65	24.26	6.9%	26.92	7.7%
R17	3.85	26.41	7.5%	30.27	8.6%
R18	3.85	25.18	7.2%	29.03	8.3%
R19	3.85	26.03	7.4%	29.88	8.5%
R20	3.85	28.45	8.1%	32.31	9.2%
R21	3.85	26.95	7.7%	30.80	8.8%
R22	3.85	22.62	6.5%	26.47	7.6%
R23	3.85	22.82	6.5%	26.67	7.6%
R24	3.85	21.59	6.2%	25.44	7.3%
R26	3.85	20.75	5.9%	24.60	7.0%
R27	3.85	24.26	6.9%	28.12	8.0%
R28	3.85	16.39	4.7%	20.24	5.8%
R29	3.85	24.33	7.0%	28.18	8.1%
R30	2.68	12.51	3.6%	15.19	4.3%
R31	2.68	12.53	3.6%	15.21	4.3%
R32	2.68	11.77	3.4%	14.44	4.1%
R33	2.68	12.79	3.7%	15.46	4.4%
R34	2.65	13.76	3.9%	16.42	4.7%
R35	3.85	13.52	3.9%	17.37	5.0%
R36	3.85	13.50	3.9%	17.35	5.0%
R37	3.85	15.58	4.5%	19.44	5.6%
R38	3.85	17.87	5.1%	21.72	6.2%
R39	3.85	19.76	5.6%	23.62	6.7%
R40	3.85	20.51	5.9%	24.36	7.0%
R41	3.85	19.43	5.6%	23.28	6.7%
R42	3.85	19.79	5.7%	23.64	6.8%
R43	3.85	19.06	5.4%	22.92	6.5%
R44	3.85	18.04	5.2%	21.89	6.3%
R45	3.73	15.29	4.4%	19.02	5.4%
R46	3.73	17.41	5.0%	21.14	6.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	3.73	15.75	4.5%	19.48	5.6%
R48	3.73	14.69	4.2%	18.43	5.3%
R49	3.73	14.49	4.1%	18.22	5.2%
R50	3.73	12.78	3.7%	16.51	4.7%
R51	3.73	12.15	3.5%	15.88	4.5%
R52	3.73	11.80	3.4%	15.54	4.4%
R53	3.73	12.95	3.7%	16.69	4.8%
R54	3.46	13.47	3.8%	16.93	4.8%
R55	3.73	14.20	4.1%	17.93	5.1%
R56	3.73	16.76	4.8%	20.49	5.9%
R57	3.85	21.27	6.1%	25.12	7.2%
R58	3.85	22.14	6.3%	25.99	7.4%
R59	4.35	22.98	6.6%	27.32	7.8%
R60	3.46	14.53	4.2%	17.99	5.1%
R61	3.73	19.75	5.6%	23.48	6.7%
R62	3.73	17.76	5.1%	21.49	6.1%
R63	3.73	17.36	5.0%	21.10	6.0%
R64	3.73	16.04	4.6%	19.78	5.7%
R65	3.73	14.95	4.3%	18.68	5.3%
R66	3.73	14.20	4.1%	17.93	5.1%
R67	2.62	13.39	3.8%	16.02	4.6%
R68	2.45	16.67	4.8%	19.12	5.5%
R69	3.01	22.94	6.6%	25.95	7.4%
R70	3.13	5.97	1.7%	9.09	2.6%
R71	3.34	10.50	3.0%	13.84	4.0%
R72	2.84	14.00	4.0%	16.84	4.8%
R73	2.84	10.60	3.0%	13.44	3.8%
R74	3.24	10.65	3.0%	13.89	4.0%
R75	3.68	8.91	2.5%	12.59	3.6%
R76	2.68	10.78	3.1%	13.46	3.8%
R77	3.01	18.69	5.3%	21.70	6.2%
R78	3.25	31.18	8.9%	34.43	9.8%
R79	3.85	31.72	9.1%	35.57	10.2%
R80	3.73	13.99	4.0%	17.72	5.1%
R81	3.73	14.43	4.1%	18.16	5.2%
R82	3.85	19.18	5.5%	23.03	6.6%
R83	3.25	7.38	2.1%	10.63	3.0%
R84	3.85	33.75	9.6%	37.61	10.7%
R85	3.85	31.29	8.9%	35.14	10.0%
R86	3.85	38.57	11.0%	42.42	12.1%
R87	3.73	14.83	4.2%	18.57	5.3%
R88	3.85	23.44	6.7%	27.30	7.8%
R89	4.44	11.15	3.2%	15.59	4.5%
R90	3.73	14.73	4.2%	18.46	5.3%
R91	3.73	14.43	4.1%	18.17	5.2%
R92	3.69	9.04	2.6%	12.74	3.6%
R93	3.69	8.16	2.3%	11.85	3.4%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	4.35	22.55	6.4%	26.89	7.7%
R95	3.46	13.43	3.8%	16.89	4.8%
R96	3.85	32.65	9.3%	36.50	10.4%
R97	3.73	14.06	4.0%	17.80	5.1%
R98	3.73	17.49	5.0%	21.22	6.1%
R99	3.73	14.41	4.1%	18.14	5.2%
R100	3.69	9.34	2.7%	13.04	3.7%
R101	3.69	9.55	2.7%	13.25	3.8%
R102	3.68	8.92	2.5%	12.60	3.6%
R103	2.84	13.97	4.0%	16.81	4.8%
R104	3.35	7.71	2.2%	11.06	3.2%
R105	3.46	13.77	3.9%	17.23	4.9%
R106	3.46	15.06	4.3%	18.51	5.3%
R107	3.85	37.90	10.8%	41.75	11.9%
R108	4.35	34.60	9.9%	38.95	11.1%
R109	3.73	14.20	4.1%	17.94	5.1%
R110	3.73	15.18	4.3%	18.92	5.4%
R111	3.73	13.25	3.8%	16.98	4.9%
R112	3.46	12.35	3.5%	15.80	4.5%
R113	3.73	12.54	3.6%	16.27	4.6%
R114	3.73	12.68	3.6%	16.41	4.7%
R115	4.44	10.42	3.0%	14.86	4.2%
R116	3.25	34.56	9.9%	37.82	10.8%
R117	3.46	13.07	3.7%	16.53	4.7%
R118	3.46	13.01	3.7%	16.47	4.7%
R119	3.73	13.32	3.8%	17.06	4.9%
R120	3.46	12.98	3.7%	16.44	4.7%
R121	3.73	14.68	4.2%	18.41	5.3%
R122	3.73	14.71	4.2%	18.44	5.3%
R123	3.73	14.72	4.2%	18.45	5.3%
R124	3.73	14.59	4.2%	18.33	5.2%
R125	3.73	16.22	4.6%	19.95	5.7%
R126	3.73	16.28	4.7%	20.02	5.7%
R127	3.73	16.31	4.7%	20.04	5.7%
R128	3.73	16.34	4.7%	20.07	5.7%
R129	3.73	16.61	4.7%	20.34	5.8%
R130	3.73	16.61	4.7%	20.34	5.8%
R131	3.73	16.55	4.7%	20.28	5.8%
R132	3.73	16.55	4.7%	20.28	5.8%
R133	3.73	16.55	4.7%	20.29	5.8%
R134	3.73	16.53	4.7%	20.26	5.8%
R135	3.73	16.53	4.7%	20.26	5.8%
R136	3.73	16.63	4.8%	20.37	5.8%
R137	3.73	16.62	4.7%	20.35	5.8%
R138	3.73	16.59	4.7%	20.32	5.8%
R139	3.73	16.57	4.7%	20.30	5.8%
R140	3.73	16.59	4.7%	20.32	5.8%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	3.73	16.58	4.7%	20.31	5.8%
R142	3.73	16.57	4.7%	20.31	5.8%
R143	3.73	16.55	4.7%	20.28	5.8%
R144	3.73	16.58	4.7%	20.31	5.8%
R145	3.73	14.52	4.1%	18.25	5.2%
R146	3.73	14.57	4.2%	18.30	5.2%
R147	3.73	14.68	4.2%	18.41	5.3%
R148	3.73	14.71	4.2%	18.44	5.3%
R149	3.73	14.71	4.2%	18.44	5.3%
R150	3.73	14.70	4.2%	18.43	5.3%
R151	3.73	14.73	4.2%	18.46	5.3%
R152	3.73	14.76	4.2%	18.50	5.3%
R153	3.73	14.80	4.2%	18.53	5.3%
R154	3.73	14.74	4.2%	18.48	5.3%
R155	3.73	14.68	4.2%	18.41	5.3%
R156	3.73	14.66	4.2%	18.40	5.3%
R157	3.73	14.63	4.2%	18.36	5.2%
R158	3.73	14.61	4.2%	18.34	5.2%
R159	3.73	14.66	4.2%	18.39	5.3%
R160	3.73	15.85	4.5%	19.58	5.6%
R161	3.73	15.85	4.5%	19.59	5.6%
R162	3.73	15.91	4.5%	19.64	5.6%
R163	3.73	15.88	4.5%	19.61	5.6%
R164	3.73	15.87	4.5%	19.60	5.6%
R165	3.73	15.84	4.5%	19.57	5.6%
R166	3.73	15.84	4.5%	19.57	5.6%
R167	3.73	15.87	4.5%	19.60	5.6%
R168	3.73	15.84	4.5%	19.58	5.6%
R169	3.73	15.88	4.5%	19.62	5.6%
R170	3.73	15.88	4.5%	19.61	5.6%
R171	3.73	15.91	4.5%	19.64	5.6%
R172	3.73	15.80	4.5%	19.53	5.6%
R173	3.73	15.86	4.5%	19.60	5.6%
R174	3.73	15.83	4.5%	19.56	5.6%
R175	3.73	15.79	4.5%	19.53	5.6%
R176	3.73	15.81	4.5%	19.54	5.6%
R177	3.73	15.85	4.5%	19.58	5.6%
R178	3.73	15.83	4.5%	19.57	5.6%
R179	3.73	15.83	4.5%	19.57	5.6%
R180	3.73	15.84	4.5%	19.57	5.6%
R181	3.73	15.83	4.5%	19.57	5.6%
R182	3.73	15.85	4.5%	19.58	5.6%
R183	3.73	15.86	4.5%	19.59	5.6%
R184	3.73	15.86	4.5%	19.59	5.6%
R185	3.73	15.82	4.5%	19.56	5.6%
R186	3.73	15.81	4.5%	19.55	5.6%
R187	3.73	15.77	4.5%	19.51	5.6%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	3.73	15.80	4.5%	19.53	5.6%
R189	3.73	15.83	4.5%	19.56	5.6%
R190	3.73	15.82	4.5%	19.55	5.6%
R191	3.73	15.86	4.5%	19.59	5.6%
R192	3.73	15.42	4.4%	19.15	5.5%
R193	3.73	15.39	4.4%	19.12	5.5%
R194	3.73	15.36	4.4%	19.09	5.5%
R195	3.73	15.33	4.4%	19.07	5.4%
R196	3.73	15.35	4.4%	19.08	5.5%
R197	3.73	15.33	4.4%	19.06	5.4%
R198	3.73	15.42	4.4%	19.15	5.5%
R199	3.73	15.37	4.4%	19.10	5.5%
R200	3.73	15.42	4.4%	19.15	5.5%
R201	3.73	15.37	4.4%	19.11	5.5%
R202	3.73	15.33	4.4%	19.06	5.4%
R203	3.73	15.39	4.4%	19.12	5.5%
R204	3.73	15.35	4.4%	19.09	5.5%
R205	3.73	15.33	4.4%	19.07	5.4%
R206	3.73	15.29	4.4%	19.02	5.4%
R207	3.73	15.28	4.4%	19.01	5.4%
R208	3.73	15.25	4.4%	18.99	5.4%
R209	3.73	15.29	4.4%	19.03	5.4%
R210	3.73	15.23	4.4%	18.96	5.4%
R211	3.73	15.33	4.4%	19.06	5.4%
R212	3.73	15.31	4.4%	19.04	5.4%
R213	3.73	15.29	4.4%	19.02	5.4%
R214	3.46	14.79	4.2%	18.25	5.2%
R215	3.46	14.77	4.2%	18.23	5.2%
R216	3.46	14.70	4.2%	18.16	5.2%
R217	3.46	14.67	4.2%	18.13	5.2%
R218	3.46	14.63	4.2%	18.09	5.2%
R219	3.46	14.65	4.2%	18.11	5.2%
R220	3.46	14.59	4.2%	18.04	5.2%
R221	3.46	14.73	4.2%	18.18	5.2%
R222	3.46	14.75	4.2%	18.21	5.2%
R223	3.46	14.91	4.3%	18.37	5.2%
R224	3.46	14.93	4.3%	18.38	5.3%
R225	3.46	14.56	4.2%	18.02	5.1%
R226	3.46	14.60	4.2%	18.06	5.2%
R227	3.46	14.60	4.2%	18.06	5.2%
R228	3.46	14.59	4.2%	18.05	5.2%
R229	3.46	14.76	4.2%	18.22	5.2%
R230	3.46	14.71	4.2%	18.17	5.2%
R231	3.46	14.64	4.2%	18.10	5.2%
R232	3.46	14.65	4.2%	18.11	5.2%
R233	3.46	14.63	4.2%	18.09	5.2%
R234	3.46	14.62	4.2%	18.07	5.2%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	3.46	14.59	4.2%	18.05	5.2%
R236	3.46	14.56	4.2%	18.02	5.1%
R237	3.46	14.52	4.1%	17.97	5.1%
R238	3.46	14.53	4.2%	17.99	5.1%
R239	3.46	14.50	4.1%	17.96	5.1%
R240	3.46	14.53	4.2%	17.99	5.1%
R241	3.46	14.46	4.1%	17.92	5.1%
R242	3.46	14.53	4.2%	17.99	5.1%
R243	3.46	14.47	4.1%	17.92	5.1%
R244	3.46	14.41	4.1%	17.87	5.1%
R245	3.46	14.34	4.1%	17.80	5.1%
R246	3.46	14.31	4.1%	17.77	5.1%
R247	3.46	14.27	4.1%	17.73	5.1%
R248	3.46	14.30	4.1%	17.76	5.1%
R249	3.46	14.30	4.1%	17.76	5.1%
R250	3.46	14.32	4.1%	17.78	5.1%
R251	3.46	14.41	4.1%	17.87	5.1%
R252	3.46	14.41	4.1%	17.87	5.1%
R253	3.10	11.02	3.1%	14.12	4.0%
R254	3.46	10.69	3.1%	14.15	4.0%
R255	3.46	10.73	3.1%	14.19	4.1%
R256	3.46	10.76	3.1%	14.22	4.1%
R257	3.46	10.80	3.1%	14.26	4.1%
R258	3.46	10.88	3.1%	14.34	4.1%
R259	3.46	10.77	3.1%	14.22	4.1%
R260	3.46	10.78	3.1%	14.24	4.1%
R261	3.46	10.83	3.1%	14.29	4.1%
R262	3.46	10.86	3.1%	14.31	4.1%
R263	3.46	10.36	3.0%	13.82	3.9%
R264	3.46	10.30	2.9%	13.76	3.9%
R265	3.46	10.30	2.9%	13.76	3.9%
R266	3.46	10.30	2.9%	13.76	3.9%
R267	3.46	10.30	2.9%	13.76	3.9%
R268	3.46	10.30	2.9%	13.76	3.9%
R269	3.46	10.30	2.9%	13.76	3.9%
R270	3.46	10.30	2.9%	13.76	3.9%
R271	3.46	10.30	2.9%	13.76	3.9%
R272	3.46	10.30	2.9%	13.76	3.9%
R273	3.46	10.30	2.9%	13.76	3.9%
R274	3.46	10.30	2.9%	13.76	3.9%
R275	3.46	10.30	2.9%	13.76	3.9%
R276	3.46	10.30	2.9%	13.76	3.9%
R277	3.46	10.30	2.9%	13.76	3.9%
R278	3.46	10.30	2.9%	13.76	3.9%
R279	3.46	10.30	2.9%	13.76	3.9%
R280	3.46	10.30	2.9%	13.76	3.9%
R281	3.46	10.30	2.9%	13.76	3.9%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	3.46	10.30	2.9%	13.76	3.9%
R283	3.46	10.27	2.9%	13.72	3.9%
R284	3.46	10.65	3.0%	14.11	4.0%
R285	3.46	10.65	3.0%	14.11	4.0%
R286	3.46	10.65	3.0%	14.11	4.0%
R287	3.46	10.65	3.0%	14.11	4.0%
R288	3.46	10.65	3.0%	14.11	4.0%
R289	3.46	10.65	3.0%	14.11	4.0%
R290	3.46	10.65	3.0%	14.11	4.0%
R291	3.46	10.65	3.0%	14.11	4.0%
R292	3.46	10.65	3.0%	14.11	4.0%
R293	3.46	10.65	3.0%	14.11	4.0%
R294	3.46	10.65	3.0%	14.11	4.0%
R295	4.44	10.56	3.0%	15.01	4.3%
R296	3.73	11.44	3.3%	15.18	4.3%
R297	3.73	14.30	4.1%	18.04	5.2%
R298	3.73	14.32	4.1%	18.05	5.2%
R299	3.85	20.65	5.9%	24.50	7.0%
R300	3.85	20.87	6.0%	24.72	7.1%
R301	3.69	8.00	2.3%	11.70	3.3%
R302	3.69	8.54	2.4%	12.23	3.5%
R303	4.44	9.53	2.7%	13.98	4.0%
R304	3.69	8.11	2.3%	11.80	3.4%
R305	3.46	16.74	4.8%	20.20	5.8%
R306	3.73	18.33	5.2%	22.06	6.3%
R307	4.35	16.65	4.8%	20.99	6.0%
R308	3.24	10.09	2.9%	13.33	3.8%
R309	3.73	13.79	3.9%	17.52	5.0%
R310	3.13	7.35	2.1%	10.48	3.0%
R311	3.85	20.86	6.0%	24.71	7.1%
R312	3.85	20.83	6.0%	24.68	7.1%
R313	3.85	20.81	5.9%	24.67	7.0%
R314	3.85	20.77	5.9%	24.62	7.0%
R315	3.85	20.72	5.9%	24.57	7.0%
R316	4.44	9.75	2.8%	14.19	4.1%
R317	3.69	8.22	2.3%	11.91	3.4%
R318	3.24	9.57	2.7%	12.81	3.7%
R319	3.73	11.89	3.4%	15.62	4.5%
R320	2.68	10.06	2.9%	12.73	3.6%
R321	2.68	8.24	2.4%	10.92	3.1%
R322	2.68	8.78	2.5%	11.46	3.3%
R323	2.68	8.39	2.4%	11.07	3.2%
R324	2.46	7.46	2.1%	9.91	2.8%
R325	2.68	8.29	2.4%	10.96	3.1%
R326	2.53	8.10	2.3%	10.63	3.0%
R327	2.53	7.58	2.2%	10.11	2.9%
R328	2.53	6.89	2.0%	9.42	2.7%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R329	2.78	6.24	1.8%	9.02	2.6%
R330	2.46	7.06	2.0%	9.52	2.7%
R331	2.82	8.23	2.4%	11.05	3.2%
R332	2.82	7.96	2.3%	10.79	3.1%
R333	2.80	5.64	1.6%	8.44	2.4%
R334	2.80	5.33	1.5%	8.12	2.3%
R335	2.80	5.33	1.5%	8.13	2.3%
R336	2.82	8.80	2.5%	11.62	3.3%
R337	2.82	8.02	2.3%	10.84	3.1%
R338	2.82	7.97	2.3%	10.79	3.1%

**Table 8B.H13 Modelled 15-minute Mean SO<sub>2</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	3.11	26.03	9.8%	29.13	11.0%
R2	3.25	32.04	12.0%	35.30	13.3%
R3	3.25	36.31	13.7%	39.57	14.9%
R4	3.25	28.69	10.8%	31.94	12.0%
R5	3.25	45.18	17.0%	48.44	18.2%
R6	3.01	47.29	17.8%	50.30	18.9%
R7	3.01	40.62	15.3%	43.63	16.4%
R8	4.35	25.73	9.7%	30.08	11.3%
R9	4.35	24.61	9.3%	28.96	10.9%
R10	4.35	19.27	7.2%	23.62	8.9%
R11	4.35	25.15	9.5%	29.49	11.1%
R12	3.46	15.12	5.7%	18.58	7.0%
R13	4.35	17.35	6.5%	21.69	8.2%
R14	3.11	20.44	7.7%	23.54	8.9%
R15	3.01	23.66	8.9%	26.67	10.0%
R16	2.65	26.44	9.9%	29.10	10.9%
R17	3.85	31.00	11.7%	34.85	13.1%
R18	3.85	29.56	11.1%	33.42	12.6%
R19	3.85	31.40	11.8%	35.25	13.3%
R20	3.85	33.54	12.6%	37.39	14.1%
R21	3.85	31.92	12.0%	35.77	13.4%
R22	3.85	27.57	10.4%	31.42	11.8%
R23	3.85	27.42	10.3%	31.27	11.8%
R24	3.85	26.13	9.8%	29.98	11.3%
R26	3.85	25.36	9.5%	29.21	11.0%
R27	3.85	29.32	11.0%	33.17	12.5%
R28	3.85	18.48	6.9%	22.33	8.4%
R29	3.85	28.82	10.8%	32.67	12.3%
R30	2.68	14.43	5.4%	17.11	6.4%
R31	2.68	14.70	5.5%	17.38	6.5%
R32	2.68	14.11	5.3%	16.79	6.3%
R33	2.68	14.80	5.6%	17.47	6.6%
R34	2.65	15.72	5.9%	18.37	6.9%
R35	3.85	15.21	5.7%	19.06	7.2%
R36	3.85	15.46	5.8%	19.31	7.3%
R37	3.85	18.72	7.0%	22.57	8.5%
R38	3.85	22.36	8.4%	26.22	9.9%
R39	3.85	24.17	9.1%	28.02	10.5%
R40	3.85	25.52	9.6%	29.38	11.0%
R41	3.85	23.93	9.0%	27.78	10.4%
R42	3.85	24.54	9.2%	28.39	10.7%
R43	3.85	23.88	9.0%	27.73	10.4%
R44	3.85	21.88	8.2%	25.74	9.7%
R45	3.73	18.61	7.0%	22.34	8.4%
R46	3.73	21.01	7.9%	24.74	9.3%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	3.73	19.49	7.3%	23.22	8.7%
R48	3.73	18.63	7.0%	22.36	8.4%
R49	3.73	18.45	6.9%	22.18	8.3%
R50	3.73	16.61	6.2%	20.34	7.6%
R51	3.73	15.64	5.9%	19.37	7.3%
R52	3.73	15.35	5.8%	19.08	7.2%
R53	3.73	16.15	6.1%	19.88	7.5%
R54	3.46	17.16	6.5%	20.62	7.8%
R55	3.73	17.92	6.7%	21.65	8.1%
R56	3.73	20.35	7.7%	24.09	9.1%
R57	3.85	24.87	9.4%	28.73	10.8%
R58	3.85	26.31	9.9%	30.16	11.3%
R59	4.35	26.64	10.0%	30.99	11.6%
R60	3.46	17.50	6.6%	20.96	7.9%
R61	3.73	23.61	8.9%	27.34	10.3%
R62	3.73	21.56	8.1%	25.29	9.5%
R63	3.73	20.96	7.9%	24.70	9.3%
R64	3.73	19.95	7.5%	23.68	8.9%
R65	3.73	18.56	7.0%	22.29	8.4%
R66	3.73	17.58	6.6%	21.31	8.0%
R67	2.62	15.05	5.7%	17.68	6.6%
R68	2.45	20.17	7.6%	22.62	8.5%
R69	3.01	29.71	11.2%	32.72	12.3%
R70	3.13	8.90	3.3%	12.03	4.5%
R71	3.34	12.64	4.8%	15.98	6.0%
R72	2.84	17.94	6.7%	20.78	7.8%
R73	2.84	12.52	4.7%	15.36	5.8%
R74	3.24	14.49	5.4%	17.73	6.7%
R75	3.68	12.18	4.6%	15.86	6.0%
R76	2.68	13.09	4.9%	15.77	5.9%
R77	3.01	24.44	9.2%	27.46	10.3%
R78	3.25	35.34	13.3%	38.59	14.5%
R79	3.85	37.27	14.0%	41.12	15.5%
R80	3.73	17.46	6.6%	21.19	8.0%
R81	3.73	18.10	6.8%	21.83	8.2%
R82	3.85	23.74	8.9%	27.59	10.4%
R83	3.25	16.13	6.1%	19.38	7.3%
R84	3.85	38.53	14.5%	42.38	15.9%
R85	3.85	35.97	13.5%	39.83	15.0%
R86	3.85	42.75	16.1%	46.61	17.5%
R87	3.73	18.14	6.8%	21.88	8.2%
R88	3.85	28.63	10.8%	32.48	12.2%
R89	4.44	14.18	5.3%	18.62	7.0%
R90	3.73	18.45	6.9%	22.18	8.3%
R91	3.73	18.24	6.9%	21.97	8.3%
R92	3.69	12.70	4.8%	16.39	6.2%
R93	3.69	12.13	4.6%	15.83	5.9%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	4.35	26.50	10.0%	30.84	11.6%
R95	3.46	17.24	6.5%	20.69	7.8%
R96	3.85	36.55	13.7%	40.40	15.2%
R97	3.73	17.71	6.7%	21.44	8.1%
R98	3.73	21.15	7.9%	24.88	9.4%
R99	3.73	18.16	6.8%	21.89	8.2%
R100	3.69	13.09	4.9%	16.79	6.3%
R101	3.69	13.61	5.1%	17.31	6.5%
R102	3.68	11.98	4.5%	15.66	5.9%
R103	2.84	18.19	6.8%	21.03	7.9%
R104	3.35	11.02	4.1%	14.38	5.4%
R105	3.46	16.92	6.4%	20.38	7.7%
R106	3.46	18.59	7.0%	22.05	8.3%
R107	3.85	41.98	15.8%	45.83	17.2%
R108	4.35	44.18	16.6%	48.53	18.2%
R109	3.73	17.87	6.7%	21.61	8.1%
R110	3.73	18.33	6.9%	22.07	8.3%
R111	3.73	16.81	6.3%	20.54	7.7%
R112	3.46	15.79	5.9%	19.25	7.2%
R113	3.73	16.29	6.1%	20.02	7.5%
R114	3.73	16.42	6.2%	20.16	7.6%
R115	4.44	13.48	5.1%	17.93	6.7%
R116	3.25	42.81	16.1%	46.07	17.3%
R117	3.46	16.79	6.3%	20.25	7.6%
R118	3.46	16.79	6.3%	20.25	7.6%
R119	3.73	17.03	6.4%	20.76	7.8%
R120	3.46	16.67	6.3%	20.13	7.6%
R121	3.73	18.29	6.9%	22.03	8.3%
R122	3.73	18.42	6.9%	22.15	8.3%
R123	3.73	18.28	6.9%	22.01	8.3%
R124	3.73	18.35	6.9%	22.08	8.3%
R125	3.73	20.17	7.6%	23.91	9.0%
R126	3.73	20.17	7.6%	23.90	9.0%
R127	3.73	20.26	7.6%	23.99	9.0%
R128	3.73	20.24	7.6%	23.97	9.0%
R129	3.73	20.40	7.7%	24.14	9.1%
R130	3.73	20.37	7.7%	24.11	9.1%
R131	3.73	20.40	7.7%	24.13	9.1%
R132	3.73	20.41	7.7%	24.14	9.1%
R133	3.73	20.45	7.7%	24.18	9.1%
R134	3.73	20.46	7.7%	24.19	9.1%
R135	3.73	20.46	7.7%	24.20	9.1%
R136	3.73	20.44	7.7%	24.17	9.1%
R137	3.73	20.41	7.7%	24.14	9.1%
R138	3.73	20.39	7.7%	24.12	9.1%
R139	3.73	20.41	7.7%	24.14	9.1%
R140	3.73	20.45	7.7%	24.18	9.1%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	3.73	20.44	7.7%	24.18	9.1%
R142	3.73	20.48	7.7%	24.21	9.1%
R143	3.73	20.49	7.7%	24.22	9.1%
R144	3.73	20.53	7.7%	24.26	9.1%
R145	3.73	18.15	6.8%	21.88	8.2%
R146	3.73	18.20	6.8%	21.93	8.2%
R147	3.73	18.29	6.9%	22.02	8.3%
R148	3.73	18.31	6.9%	22.05	8.3%
R149	3.73	18.59	7.0%	22.33	8.4%
R150	3.73	18.74	7.0%	22.48	8.5%
R151	3.73	18.67	7.0%	22.40	8.4%
R152	3.73	18.78	7.1%	22.52	8.5%
R153	3.73	18.53	7.0%	22.26	8.4%
R154	3.73	18.41	6.9%	22.15	8.3%
R155	3.73	18.27	6.9%	22.00	8.3%
R156	3.73	18.43	6.9%	22.16	8.3%
R157	3.73	18.39	6.9%	22.12	8.3%
R158	3.73	18.24	6.9%	21.97	8.3%
R159	3.73	18.21	6.8%	21.95	8.3%
R160	3.73	19.57	7.4%	23.30	8.8%
R161	3.73	19.59	7.4%	23.33	8.8%
R162	3.73	19.65	7.4%	23.38	8.8%
R163	3.73	19.64	7.4%	23.38	8.8%
R164	3.73	19.60	7.4%	23.34	8.8%
R165	3.73	19.64	7.4%	23.37	8.8%
R166	3.73	19.65	7.4%	23.38	8.8%
R167	3.73	19.61	7.4%	23.34	8.8%
R168	3.73	19.64	7.4%	23.37	8.8%
R169	3.73	19.65	7.4%	23.38	8.8%
R170	3.73	19.61	7.4%	23.34	8.8%
R171	3.73	19.65	7.4%	23.38	8.8%
R172	3.73	19.65	7.4%	23.38	8.8%
R173	3.73	19.62	7.4%	23.35	8.8%
R174	3.73	19.62	7.4%	23.35	8.8%
R175	3.73	19.61	7.4%	23.34	8.8%
R176	3.73	19.62	7.4%	23.35	8.8%
R177	3.73	19.61	7.4%	23.34	8.8%
R178	3.73	19.62	7.4%	23.35	8.8%
R179	3.73	19.56	7.4%	23.29	8.8%
R180	3.73	19.58	7.4%	23.31	8.8%
R181	3.73	19.56	7.4%	23.29	8.8%
R182	3.73	19.58	7.4%	23.31	8.8%
R183	3.73	19.58	7.4%	23.31	8.8%
R184	3.73	19.58	7.4%	23.32	8.8%
R185	3.73	19.58	7.4%	23.32	8.8%
R186	3.73	19.59	7.4%	23.33	8.8%
R187	3.73	19.59	7.4%	23.32	8.8%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	3.73	19.60	7.4%	23.33	8.8%
R189	3.73	19.59	7.4%	23.32	8.8%
R190	3.73	19.60	7.4%	23.33	8.8%
R191	3.73	19.58	7.4%	23.31	8.8%
R192	3.73	19.33	7.3%	23.07	8.7%
R193	3.73	19.32	7.3%	23.05	8.7%
R194	3.73	19.30	7.3%	23.03	8.7%
R195	3.73	19.28	7.2%	23.02	8.7%
R196	3.73	19.31	7.3%	23.04	8.7%
R197	3.73	19.29	7.3%	23.02	8.7%
R198	3.73	19.32	7.3%	23.06	8.7%
R199	3.73	19.29	7.3%	23.03	8.7%
R200	3.73	19.56	7.4%	23.30	8.8%
R201	3.73	19.52	7.3%	23.25	8.7%
R202	3.73	19.46	7.3%	23.19	8.7%
R203	3.73	19.52	7.3%	23.25	8.7%
R204	3.73	19.48	7.3%	23.21	8.7%
R205	3.73	19.45	7.3%	23.18	8.7%
R206	3.73	19.41	7.3%	23.14	8.7%
R207	3.73	19.39	7.3%	23.12	8.7%
R208	3.73	19.36	7.3%	23.10	8.7%
R209	3.73	19.41	7.3%	23.14	8.7%
R210	3.73	19.34	7.3%	23.07	8.7%
R211	3.73	19.47	7.3%	23.20	8.7%
R212	3.73	19.44	7.3%	23.18	8.7%
R213	3.73	19.40	7.3%	23.13	8.7%
R214	3.46	18.27	6.9%	21.73	8.2%
R215	3.46	18.26	6.9%	21.72	8.2%
R216	3.46	18.12	6.8%	21.58	8.1%
R217	3.46	17.92	6.7%	21.38	8.0%
R218	3.46	17.99	6.8%	21.45	8.1%
R219	3.46	18.02	6.8%	21.48	8.1%
R220	3.46	18.08	6.8%	21.54	8.1%
R221	3.46	18.17	6.8%	21.62	8.1%
R222	3.46	18.26	6.9%	21.72	8.2%
R223	3.46	18.41	6.9%	21.87	8.2%
R224	3.46	18.41	6.9%	21.87	8.2%
R225	3.46	18.03	6.8%	21.49	8.1%
R226	3.46	18.02	6.8%	21.48	8.1%
R227	3.46	18.05	6.8%	21.51	8.1%
R228	3.46	18.13	6.8%	21.58	8.1%
R229	3.46	18.45	6.9%	21.91	8.2%
R230	3.46	18.28	6.9%	21.74	8.2%
R231	3.46	18.12	6.8%	21.57	8.1%
R232	3.46	18.34	6.9%	21.80	8.2%
R233	3.46	18.36	6.9%	21.82	8.2%
R234	3.46	18.22	6.9%	21.68	8.2%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	3.46	18.08	6.8%	21.54	8.1%
R236	3.46	18.04	6.8%	21.50	8.1%
R237	3.46	17.93	6.7%	21.39	8.0%
R238	3.46	18.03	6.8%	21.49	8.1%
R239	3.46	18.07	6.8%	21.52	8.1%
R240	3.46	18.14	6.8%	21.60	8.1%
R241	3.46	18.18	6.8%	21.64	8.1%
R242	3.46	18.03	6.8%	21.49	8.1%
R243	3.46	17.91	6.7%	21.36	8.0%
R244	3.46	17.86	6.7%	21.32	8.0%
R245	3.46	17.81	6.7%	21.27	8.0%
R246	3.46	17.76	6.7%	21.22	8.0%
R247	3.46	17.73	6.7%	21.19	8.0%
R248	3.46	17.64	6.6%	21.10	7.9%
R249	3.46	17.69	6.6%	21.14	7.9%
R250	3.46	17.75	6.7%	21.21	8.0%
R251	3.46	17.86	6.7%	21.32	8.0%
R252	3.46	17.69	6.7%	21.15	8.0%
R253	3.10	13.22	5.0%	16.32	6.1%
R254	3.46	14.15	5.3%	17.61	6.6%
R255	3.46	14.19	5.3%	17.65	6.6%
R256	3.46	14.29	5.4%	17.75	6.7%
R257	3.46	14.20	5.3%	17.66	6.6%
R258	3.46	14.18	5.3%	17.63	6.6%
R259	3.46	14.23	5.3%	17.69	6.6%
R260	3.46	14.33	5.4%	17.79	6.7%
R261	3.46	14.25	5.4%	17.70	6.7%
R262	3.46	14.18	5.3%	17.63	6.6%
R263	3.46	13.91	5.2%	17.37	6.5%
R264	3.46	13.93	5.2%	17.39	6.5%
R265	3.46	13.93	5.2%	17.39	6.5%
R266	3.46	13.93	5.2%	17.39	6.5%
R267	3.46	13.93	5.2%	17.39	6.5%
R268	3.46	13.93	5.2%	17.39	6.5%
R269	3.46	13.93	5.2%	17.39	6.5%
R270	3.46	13.93	5.2%	17.39	6.5%
R271	3.46	13.93	5.2%	17.39	6.5%
R272	3.46	13.93	5.2%	17.39	6.5%
R273	3.46	13.93	5.2%	17.39	6.5%
R274	3.46	13.93	5.2%	17.39	6.5%
R275	3.46	13.93	5.2%	17.39	6.5%
R276	3.46	13.93	5.2%	17.39	6.5%
R277	3.46	13.93	5.2%	17.39	6.5%
R278	3.46	13.93	5.2%	17.39	6.5%
R279	3.46	13.93	5.2%	17.39	6.5%
R280	3.46	13.93	5.2%	17.39	6.5%
R281	3.46	13.93	5.2%	17.39	6.5%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	3.46	13.93	5.2%	17.39	6.5%
R283	3.46	13.93	5.2%	17.39	6.5%
R284	3.46	14.07	5.3%	17.53	6.6%
R285	3.46	14.07	5.3%	17.53	6.6%
R286	3.46	14.07	5.3%	17.53	6.6%
R287	3.46	14.07	5.3%	17.53	6.6%
R288	3.46	14.07	5.3%	17.53	6.6%
R289	3.46	14.07	5.3%	17.53	6.6%
R290	3.46	14.07	5.3%	17.53	6.6%
R291	3.46	14.07	5.3%	17.53	6.6%
R292	3.46	14.07	5.3%	17.53	6.6%
R293	3.46	14.07	5.3%	17.53	6.6%
R294	3.46	14.07	5.3%	17.53	6.6%
R295	4.44	14.20	5.3%	18.64	7.0%
R296	3.73	14.69	5.5%	18.42	6.9%
R297	3.73	18.06	6.8%	21.79	8.2%
R298	3.73	17.68	6.6%	21.41	8.0%
R299	3.85	24.74	9.3%	28.59	10.7%
R300	3.85	24.89	9.4%	28.74	10.8%
R301	3.69	12.10	4.5%	15.79	5.9%
R302	3.69	12.56	4.7%	16.25	6.1%
R303	4.44	12.97	4.9%	17.41	6.5%
R304	3.69	12.88	4.8%	16.57	6.2%
R305	3.46	20.53	7.7%	23.99	9.0%
R306	3.73	22.58	8.5%	26.32	9.9%
R307	4.35	20.58	7.7%	24.92	9.4%
R308	3.24	14.70	5.5%	17.94	6.7%
R309	3.73	17.05	6.4%	20.78	7.8%
R310	3.13	11.30	4.2%	14.43	5.4%
R311	3.85	24.81	9.3%	28.66	10.8%
R312	3.85	24.74	9.3%	28.59	10.7%
R313	3.85	24.62	9.3%	28.47	10.7%
R314	3.85	24.64	9.3%	28.49	10.7%
R315	3.85	24.69	9.3%	28.54	10.7%
R316	4.44	13.08	4.9%	17.52	6.6%
R317	3.69	12.23	4.6%	15.93	6.0%
R318	3.24	13.63	5.1%	16.87	6.3%
R319	3.73	15.37	5.8%	19.10	7.2%
R320	2.68	12.42	4.7%	15.09	5.7%
R321	2.68	10.47	3.9%	13.14	4.9%
R322	2.68	11.71	4.4%	14.39	5.4%
R323	2.68	10.91	4.1%	13.59	5.1%
R324	2.46	9.72	3.7%	12.18	4.6%
R325	2.68	10.68	4.0%	13.36	5.0%
R326	2.53	10.75	4.0%	13.28	5.0%
R327	2.53	10.22	3.8%	12.75	4.8%
R328	2.53	9.99	3.8%	12.53	4.7%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R329	2.78	9.42	3.5%	12.20	4.6%
R330	2.46	10.30	3.9%	12.75	4.8%
R331	2.82	13.14	4.9%	15.96	6.0%
R332	2.82	12.73	4.8%	15.56	5.8%
R333	2.80	9.62	3.6%	12.42	4.7%
R334	2.80	9.67	3.6%	12.46	4.7%
R335	2.80	9.28	3.5%	12.08	4.5%
R336	2.82	13.83	5.2%	16.65	6.3%
R337	2.82	12.81	4.8%	15.63	5.9%
R338	2.82	12.85	4.8%	15.68	5.9%

**Table 8B.H14 Modelled Annual Mean VOC Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	0.24	0.01	0.2%	0.25	5.1%
R2	0.22	0.01	0.1%	0.23	4.6%
R3	0.22	0.01	0.2%	0.24	4.7%
R4	0.22	0.02	0.5%	0.25	4.9%
R5	0.22	0.07	1.5%	0.30	5.9%
R6	0.21	0.03	0.6%	0.24	4.8%
R7	0.21	0.03	0.7%	0.24	4.8%
R8	0.27	0.01	0.2%	0.28	5.5%
R9	0.27	0.02	0.4%	0.29	5.7%
R10	0.27	0.02	0.3%	0.28	5.6%
R11	0.27	0.03	0.6%	0.29	5.9%
R12	0.27	0.01	0.2%	0.28	5.7%
R13	0.27	0.01	0.2%	0.28	5.5%
R14	0.24	0.01	0.2%	0.25	5.0%
R15	0.21	0.01	0.3%	0.22	4.4%
R16	0.23	0.04	0.8%	0.27	5.3%
R17	0.27	0.05	1.0%	0.32	6.4%
R18	0.27	0.05	1.0%	0.32	6.4%
R19	0.27	0.06	1.1%	0.33	6.5%
R20	0.27	0.07	1.3%	0.34	6.7%
R21	0.27	0.06	1.3%	0.33	6.7%
R22	0.27	0.06	1.1%	0.33	6.5%
R23	0.27	0.05	1.0%	0.32	6.4%
R24	0.27	0.05	1.0%	0.32	6.4%
R26	0.27	0.05	1.0%	0.32	6.4%
R27	0.27	0.05	1.1%	0.32	6.5%
R28	0.27	0.04	0.8%	0.31	6.2%
R29	0.27	0.07	1.3%	0.34	6.7%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R30	0.23	0.03	0.6%	0.26 5.1%
R31	0.23	0.03	0.5%	0.26 5.1%
R32	0.23	0.03	0.5%	0.25 5.1%
R33	0.23	0.03	0.6%	0.26 5.1%
R34	0.23	0.03	0.6%	0.26 5.2%
R35	0.27	0.03	0.6%	0.30 6.0%
R36	0.27	0.03	0.7%	0.30 6.1%
R37	0.27	0.04	0.7%	0.31 6.1%
R38	0.27	0.04	0.8%	0.31 6.2%
R39	0.27	0.04	0.9%	0.31 6.3%
R40	0.27	0.05	1.0%	0.32 6.4%
R41	0.27	0.05	0.9%	0.32 6.3%
R42	0.27	0.05	1.0%	0.32 6.4%
R43	0.27	0.05	1.0%	0.32 6.4%
R44	0.27	0.05	1.1%	0.32 6.5%
R45	0.28	0.05	1.0%	0.32 6.5%
R46	0.28	0.06	1.1%	0.33 6.6%
R47	0.28	0.05	1.0%	0.33 6.5%
R48	0.28	0.05	0.9%	0.32 6.5%
R49	0.28	0.04	0.8%	0.32 6.4%
R50	0.28	0.04	0.7%	0.31 6.2%
R51	0.28	0.03	0.6%	0.31 6.1%
R52	0.28	0.03	0.6%	0.30 6.1%
R53	0.28	0.03	0.5%	0.30 6.0%
R54	0.27	0.03	0.5%	0.30 5.9%
R55	0.28	0.04	0.8%	0.31 6.3%
R56	0.28	0.05	1.1%	0.33 6.6%
R57	0.27	0.07	1.4%	0.34 6.8%
R58	0.27	0.07	1.5%	0.34 6.9%
R59	0.27	0.05	1.1%	0.32 6.4%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R60	0.27	0.02	0.3%	0.29 5.8%
R61	0.28	0.06	1.1%	0.33 6.6%
R62	0.28	0.06	1.2%	0.33 6.7%
R63	0.28	0.04	0.8%	0.32 6.4%
R64	0.28	0.04	0.9%	0.32 6.4%
R65	0.28	0.05	0.9%	0.32 6.4%
R66	0.28	0.03	0.6%	0.31 6.1%
R67	0.20	0.02	0.4%	0.22 4.3%
R68	0.20	0.02	0.3%	0.21 4.2%
R69	0.21	0.02	0.4%	0.23 4.6%
R70	0.18	0.00	0.1%	0.18 3.6%
R71	0.20	0.01	0.1%	0.21 4.2%
R72	0.24	0.03	0.7%	0.28 5.5%
R73	0.24	0.02	0.5%	0.27 5.4%
R74	0.27	0.03	0.6%	0.31 6.1%
R75	0.27	0.01	0.2%	0.28 5.6%
R76	0.21	0.02	0.4%	0.23 4.6%
R77	0.21	0.02	0.4%	0.23 4.5%
R78	0.22	0.02	0.5%	0.25 5.0%
R79	0.27	0.09	1.8%	0.36 7.2%
R80	0.28	0.04	0.9%	0.32 6.4%
R81	0.28	0.04	0.8%	0.32 6.3%
R82	0.27	0.05	1.1%	0.32 6.5%
R83	0.22	0.00	0.1%	0.23 4.5%
R84	0.27	0.09	1.8%	0.36 7.2%
R85	0.27	0.09	1.8%	0.36 7.2%
R86	0.27	0.09	1.8%	0.36 7.2%
R87	0.28	0.05	0.9%	0.32 6.4%
R88	0.27	0.06	1.2%	0.33 6.6%
R89	0.27	0.02	0.5%	0.30 5.9%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL	
R90	0.28	0.05	1.0%	0.32	6.5%
R91	0.28	0.05	0.9%	0.32	6.4%
R92	0.27	0.03	0.5%	0.30	6.0%
R93	0.27	0.02	0.5%	0.30	5.9%
R94	0.27	0.03	0.7%	0.30	6.0%
R95	0.27	0.02	0.5%	0.30	5.9%
R96	0.27	0.09	1.9%	0.36	7.3%
R97	0.28	0.04	0.9%	0.32	6.4%
R98	0.28	0.06	1.1%	0.33	6.6%
R99	0.28	0.05	0.9%	0.32	6.4%
R100	0.27	0.03	0.6%	0.30	6.0%
R101	0.27	0.03	0.6%	0.30	6.0%
R102	0.27	0.01	0.2%	0.28	5.6%
R103	0.27	0.03	0.7%	0.30	6.0%
R104	0.27	0.01	0.3%	0.28	5.6%
R105	0.27	0.02	0.4%	0.29	5.8%
R106	0.27	0.02	0.5%	0.30	5.9%
R107	0.27	0.09	1.8%	0.36	7.2%
R108	0.27	0.03	0.5%	0.29	5.8%
R109	0.28	0.04	0.7%	0.31	6.2%
R110	0.28	0.04	0.7%	0.31	6.2%
R111	0.28	0.03	0.7%	0.31	6.2%
R112	0.27	0.02	0.4%	0.29	5.9%
R113	0.28	0.03	0.7%	0.31	6.2%
R114	0.28	0.03	0.7%	0.31	6.2%
R115	0.27	0.02	0.5%	0.29	5.9%
R116	0.22	0.02	0.4%	0.24	4.9%
R117	0.27	0.02	0.5%	0.29	5.9%
R118	0.27	0.02	0.5%	0.29	5.9%
R119	0.28	0.04	0.8%	0.31	6.3%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R120	0.27	0.02	0.5%	0.29 5.9%
R121	0.28	0.05	0.9%	0.32 6.5%
R122	0.28	0.05	0.9%	0.32 6.5%
R123	0.28	0.05	0.9%	0.32 6.5%
R124	0.28	0.05	0.9%	0.32 6.5%
R125	0.28	0.05	1.1%	0.33 6.6%
R126	0.28	0.05	1.1%	0.33 6.6%
R127	0.28	0.05	1.1%	0.33 6.6%
R128	0.28	0.05	1.1%	0.33 6.6%
R129	0.28	0.05	1.1%	0.33 6.6%
R130	0.28	0.05	1.1%	0.33 6.6%
R131	0.28	0.05	1.1%	0.33 6.6%
R132	0.28	0.05	1.1%	0.33 6.6%
R133	0.28	0.05	1.1%	0.33 6.6%
R134	0.28	0.05	1.1%	0.33 6.6%
R135	0.28	0.05	1.1%	0.33 6.6%
R136	0.28	0.05	1.1%	0.33 6.6%
R137	0.28	0.05	1.1%	0.33 6.6%
R138	0.28	0.05	1.1%	0.33 6.6%
R139	0.28	0.05	1.1%	0.33 6.6%
R140	0.28	0.05	1.1%	0.33 6.6%
R141	0.28	0.05	1.1%	0.33 6.6%
R142	0.28	0.05	1.1%	0.33 6.6%
R143	0.28	0.05	1.1%	0.33 6.6%
R144	0.28	0.05	1.1%	0.33 6.6%
R145	0.28	0.05	0.9%	0.32 6.4%
R146	0.28	0.05	0.9%	0.32 6.5%
R147	0.28	0.05	0.9%	0.32 6.5%
R148	0.28	0.05	0.9%	0.32 6.5%
R149	0.28	0.05	0.9%	0.32 6.5%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R150	0.28	0.05	0.9%	0.32 6.5%
R151	0.28	0.05	1.0%	0.32 6.5%
R152	0.28	0.05	1.0%	0.32 6.5%
R153	0.28	0.05	1.0%	0.32 6.5%
R154	0.28	0.05	0.9%	0.32 6.5%
R155	0.28	0.05	0.9%	0.32 6.5%
R156	0.28	0.05	0.9%	0.32 6.5%
R157	0.28	0.05	0.9%	0.32 6.5%
R158	0.28	0.05	0.9%	0.32 6.5%
R159	0.28	0.05	0.9%	0.32 6.5%
R160	0.28	0.05	1.0%	0.33 6.5%
R161	0.28	0.05	1.0%	0.33 6.5%
R162	0.28	0.05	1.0%	0.33 6.5%
R163	0.28	0.05	1.0%	0.33 6.5%
R164	0.28	0.05	1.0%	0.33 6.5%
R165	0.28	0.05	1.0%	0.33 6.5%
R166	0.28	0.05	1.0%	0.33 6.5%
R167	0.28	0.05	1.0%	0.33 6.5%
R168	0.28	0.05	1.0%	0.33 6.5%
R169	0.28	0.05	1.0%	0.33 6.6%
R170	0.28	0.05	1.0%	0.33 6.5%
R171	0.28	0.05	1.0%	0.33 6.5%
R172	0.28	0.05	1.0%	0.33 6.5%
R173	0.28	0.05	1.0%	0.33 6.5%
R174	0.28	0.05	1.0%	0.33 6.5%
R175	0.28	0.05	1.0%	0.33 6.5%
R176	0.28	0.05	1.0%	0.33 6.5%
R177	0.28	0.05	1.0%	0.33 6.5%
R178	0.28	0.05	1.0%	0.33 6.5%
R179	0.28	0.05	1.0%	0.33 6.5%



ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL	
R180	0.28	0.05	1.0%	0.33	6.5%
R181	0.28	0.05	1.0%	0.33	6.5%
R182	0.28	0.05	1.0%	0.33	6.5%
R183	0.28	0.05	1.0%	0.33	6.5%
R184	0.28	0.05	1.0%	0.33	6.5%
R185	0.28	0.05	1.0%	0.33	6.5%
R186	0.28	0.05	1.0%	0.33	6.5%
R187	0.28	0.05	1.0%	0.33	6.5%
R188	0.28	0.05	1.0%	0.33	6.5%
R189	0.28	0.05	1.0%	0.33	6.5%
R190	0.28	0.05	1.0%	0.33	6.5%
R191	0.28	0.05	1.0%	0.33	6.5%
R192	0.28	0.05	0.9%	0.32	6.4%
R193	0.28	0.05	0.9%	0.32	6.4%
R194	0.28	0.05	0.9%	0.32	6.4%
R195	0.28	0.05	0.9%	0.32	6.4%
R196	0.28	0.05	0.9%	0.32	6.4%
R197	0.28	0.05	0.9%	0.32	6.4%
R198	0.28	0.05	0.9%	0.32	6.4%
R199	0.28	0.05	0.9%	0.32	6.4%
R200	0.28	0.05	0.9%	0.32	6.4%
R201	0.28	0.05	0.9%	0.32	6.4%
R202	0.28	0.05	0.9%	0.32	6.4%
R203	0.28	0.05	0.9%	0.32	6.4%
R204	0.28	0.05	0.9%	0.32	6.4%
R205	0.28	0.05	0.9%	0.32	6.4%
R206	0.28	0.05	0.9%	0.32	6.4%
R207	0.28	0.05	0.9%	0.32	6.4%
R208	0.28	0.04	0.9%	0.32	6.4%
R209	0.28	0.05	0.9%	0.32	6.4%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL	
R210	0.28	0.04	0.9%	0.32	6.4%
R211	0.28	0.05	0.9%	0.32	6.4%
R212	0.28	0.05	0.9%	0.32	6.4%
R213	0.28	0.05	0.9%	0.32	6.4%
R214	0.27	0.03	0.5%	0.30	5.9%
R215	0.27	0.02	0.5%	0.30	5.9%
R216	0.27	0.02	0.5%	0.30	5.9%
R217	0.27	0.02	0.5%	0.30	5.9%
R218	0.27	0.02	0.5%	0.30	5.9%
R219	0.27	0.02	0.5%	0.30	5.9%
R220	0.27	0.02	0.5%	0.30	5.9%
R221	0.27	0.02	0.5%	0.30	5.9%
R222	0.27	0.02	0.5%	0.30	5.9%
R223	0.27	0.02	0.5%	0.30	5.9%
R224	0.27	0.02	0.5%	0.30	5.9%
R225	0.27	0.02	0.5%	0.30	5.9%
R226	0.27	0.02	0.5%	0.29	5.9%
R227	0.27	0.02	0.5%	0.29	5.9%
R228	0.27	0.02	0.5%	0.29	5.9%
R229	0.27	0.02	0.5%	0.29	5.9%
R230	0.27	0.02	0.5%	0.29	5.9%
R231	0.27	0.02	0.5%	0.29	5.9%
R232	0.27	0.02	0.5%	0.29	5.9%
R233	0.27	0.02	0.5%	0.29	5.9%
R234	0.27	0.02	0.5%	0.29	5.9%
R235	0.27	0.02	0.5%	0.29	5.9%
R236	0.27	0.02	0.5%	0.29	5.9%
R237	0.27	0.02	0.5%	0.29	5.9%
R238	0.27	0.02	0.5%	0.29	5.9%
R239	0.27	0.02	0.5%	0.29	5.9%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R240	0.27	0.02	0.5%	0.29 5.9%
R241	0.27	0.02	0.5%	0.29 5.9%
R242	0.27	0.02	0.5%	0.29 5.9%
R243	0.27	0.02	0.5%	0.29 5.9%
R244	0.27	0.02	0.5%	0.29 5.9%
R245	0.27	0.02	0.5%	0.29 5.9%
R246	0.27	0.02	0.5%	0.29 5.9%
R247	0.27	0.02	0.5%	0.29 5.9%
R248	0.27	0.02	0.5%	0.29 5.9%
R249	0.27	0.02	0.5%	0.29 5.9%
R250	0.27	0.02	0.5%	0.29 5.9%
R251	0.27	0.02	0.5%	0.29 5.9%
R252	0.27	0.02	0.5%	0.30 5.9%
R253	0.25	0.01	0.2%	0.25 5.1%
R254	0.27	0.01	0.3%	0.28 5.7%
R255	0.27	0.01	0.3%	0.28 5.7%
R256	0.27	0.01	0.3%	0.28 5.7%
R257	0.27	0.01	0.3%	0.28 5.7%
R258	0.27	0.01	0.3%	0.28 5.7%
R259	0.27	0.01	0.3%	0.28 5.7%
R260	0.27	0.01	0.3%	0.28 5.7%
R261	0.27	0.01	0.3%	0.28 5.7%
R262	0.27	0.01	0.3%	0.28 5.7%
R263	0.27	0.01	0.3%	0.28 5.7%
R264	0.27	0.01	0.3%	0.28 5.7%
R265	0.27	0.01	0.3%	0.28 5.7%
R266	0.27	0.01	0.3%	0.28 5.7%
R267	0.27	0.01	0.3%	0.28 5.7%
R268	0.27	0.01	0.3%	0.28 5.7%
R269	0.27	0.01	0.3%	0.28 5.7%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R270	0.27	0.01	0.3%	0.28 5.7%
R271	0.27	0.01	0.3%	0.28 5.7%
R272	0.27	0.01	0.3%	0.28 5.7%
R273	0.27	0.01	0.3%	0.28 5.7%
R274	0.27	0.01	0.3%	0.28 5.7%
R275	0.27	0.01	0.3%	0.28 5.7%
R276	0.27	0.01	0.3%	0.28 5.7%
R277	0.27	0.01	0.3%	0.28 5.7%
R278	0.27	0.01	0.3%	0.28 5.7%
R279	0.27	0.01	0.3%	0.28 5.7%
R280	0.27	0.01	0.3%	0.28 5.7%
R281	0.27	0.01	0.3%	0.28 5.7%
R282	0.27	0.01	0.3%	0.28 5.7%
R283	0.27	0.01	0.3%	0.28 5.7%
R284	0.27	0.01	0.3%	0.28 5.7%
R285	0.27	0.01	0.3%	0.28 5.7%
R286	0.27	0.01	0.3%	0.28 5.7%
R287	0.27	0.01	0.3%	0.28 5.7%
R288	0.27	0.01	0.3%	0.28 5.7%
R289	0.27	0.01	0.3%	0.28 5.7%
R290	0.27	0.01	0.3%	0.28 5.7%
R291	0.27	0.01	0.3%	0.28 5.7%
R292	0.27	0.01	0.3%	0.28 5.7%
R293	0.27	0.01	0.3%	0.28 5.7%
R294	0.27	0.01	0.3%	0.28 5.7%
R295	0.27	0.03	0.6%	0.30 6.0%
R296	0.28	0.04	0.7%	0.31 6.2%
R297	0.28	0.04	0.8%	0.32 6.3%
R298	0.28	0.04	0.8%	0.32 6.3%
R299	0.27	0.07	1.4%	0.34 6.8%

ID	Background PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R300	0.27	0.07	1.4%	0.34
R301	0.27	0.02	0.5%	0.29
R302	0.27	0.03	0.5%	0.30
R303	0.27	0.03	0.5%	0.30
R304	0.27	0.02	0.5%	0.29
R305	0.27	0.04	0.7%	0.31
R306	0.28	0.06	1.1%	0.33
R307	0.27	0.01	0.2%	0.28
R308	0.27	0.03	0.6%	0.30
R309	0.28	0.04	0.8%	0.32
R310	0.27	0.02	0.4%	0.29
R311	0.27	0.07	1.4%	0.34
R312	0.27	0.07	1.4%	0.34
R313	0.27	0.07	1.4%	0.34
R314	0.27	0.07	1.4%	0.34
R315	0.27	0.07	1.4%	0.34
R316	0.27	0.03	0.6%	0.30
R317	0.27	0.02	0.5%	0.29
R318	0.27	0.03	0.6%	0.30
R319	0.28	0.02	0.5%	0.30
R320	0.23	0.02	0.4%	0.25
R321	0.23	0.01	0.3%	0.25
R322	0.23	0.02	0.4%	0.25
R323	0.23	0.02	0.3%	0.25
R324	0.20	0.01	0.3%	0.22
R325	0.23	0.02	0.3%	0.25
R326	0.23	0.02	0.3%	0.24
R327	0.23	0.01	0.3%	0.24
R328	0.23	0.01	0.3%	0.24
R329	0.21	0.01	0.2%	0.22

<b>ID</b>	<b>Background PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
<b>R330</b>	0.20	0.01	0.2%	0.21 4.3%
<b>R331</b>	0.25	0.02	0.3%	0.27 5.4%
<b>R332</b>	0.25	0.02	0.3%	0.27 5.4%
<b>R333</b>	0.20	0.01	0.3%	0.21 4.2%
<b>R334</b>	0.20	0.01	0.3%	0.21 4.2%
<b>R335</b>	0.20	0.01	0.3%	0.21 4.2%
<b>R336</b>	0.25	0.02	0.4%	0.27 5.4%
<b>R337</b>	0.25	0.02	0.3%	0.27 5.3%
<b>R338</b>	0.25	0.02	0.3%	0.27 5.4%

**Table 8B.H15 Modelled 1-hour Mean VOC Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	0.48	3.04	1.6%	3.52	1.8%
R2	0.45	4.27	2.2%	4.72	2.4%
R3	0.45	4.10	2.1%	4.54	2.3%
R4	0.45	2.96	1.5%	3.40	1.7%
R5	0.45	4.67	2.4%	5.12	2.6%
R6	0.41	4.93	2.5%	5.34	2.7%
R7	0.41	4.01	2.1%	4.43	2.3%
R8	0.53	3.05	1.6%	3.58	1.8%
R9	0.53	2.58	1.3%	3.11	1.6%
R10	0.53	2.10	1.1%	2.63	1.4%
R11	0.53	2.46	1.3%	3.00	1.5%
R12	0.54	1.71	0.9%	2.25	1.2%
R13	0.53	1.83	0.9%	2.37	1.2%
R14	0.48	2.24	1.1%	2.72	1.4%
R15	0.41	2.51	1.3%	2.92	1.5%
R16	0.46	2.86	1.5%	3.32	1.7%
R17	0.54	3.37	1.7%	3.91	2.0%
R18	0.54	3.01	1.5%	3.55	1.8%
R19	0.54	2.97	1.5%	3.51	1.8%
R20	0.54	3.28	1.7%	3.82	2.0%
R21	0.54	3.11	1.6%	3.65	1.9%
R22	0.54	2.65	1.4%	3.19	1.6%
R23	0.54	2.60	1.3%	3.14	1.6%
R24	0.54	2.45	1.3%	2.99	1.5%
R26	0.54	2.41	1.2%	2.95	1.5%
R27	0.54	2.83	1.5%	3.37	1.7%
R28	0.54	1.89	1.0%	2.43	1.2%
R29	0.54	2.71	1.4%	3.25	1.7%
R30	0.46	2.21	1.1%	2.67	1.4%
R31	0.46	2.24	1.1%	2.69	1.4%
R32	0.46	2.23	1.1%	2.69	1.4%
R33	0.46	2.13	1.1%	2.58	1.3%
R34	0.46	1.96	1.0%	2.41	1.2%
R35	0.54	2.11	1.1%	2.65	1.4%
R36	0.54	2.12	1.1%	2.66	1.4%
R37	0.54	1.95	1.0%	2.49	1.3%
R38	0.54	2.24	1.1%	2.78	1.4%
R39	0.54	2.38	1.2%	2.92	1.5%
R40	0.54	2.32	1.2%	2.86	1.5%
R41	0.54	2.24	1.1%	2.78	1.4%
R42	0.54	2.22	1.1%	2.76	1.4%
R43	0.54	2.19	1.1%	2.73	1.4%
R44	0.54	2.02	1.0%	2.56	1.3%
R45	0.55	1.71	0.9%	2.26	1.2%
R46	0.55	1.93	1.0%	2.48	1.3%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	0.55	1.79	0.9%	2.34	1.2%
R48	0.55	1.67	0.9%	2.22	1.1%
R49	0.55	1.67	0.9%	2.22	1.1%
R50	0.55	1.47	0.8%	2.02	1.0%
R51	0.55	1.38	0.7%	1.93	1.0%
R52	0.55	1.37	0.7%	1.92	1.0%
R53	0.55	1.48	0.8%	2.03	1.0%
R54	0.54	1.68	0.9%	2.22	1.1%
R55	0.55	1.62	0.8%	2.17	1.1%
R56	0.55	1.90	1.0%	2.45	1.3%
R57	0.54	2.40	1.2%	2.94	1.5%
R58	0.54	2.49	1.3%	3.03	1.6%
R59	0.53	2.55	1.3%	3.09	1.6%
R60	0.54	1.84	0.9%	2.38	1.2%
R61	0.55	2.25	1.2%	2.80	1.4%
R62	0.55	2.04	1.0%	2.59	1.3%
R63	0.55	1.96	1.0%	2.51	1.3%
R64	0.55	1.84	0.9%	2.39	1.2%
R65	0.55	1.72	0.9%	2.27	1.2%
R66	0.55	1.61	0.8%	2.17	1.1%
R67	0.40	1.71	0.9%	2.11	1.1%
R68	0.39	2.00	1.0%	2.39	1.2%
R69	0.41	2.79	1.4%	3.20	1.6%
R70	0.35	1.37	0.7%	1.72	0.9%
R71	0.40	1.59	0.8%	1.99	1.0%
R72	0.49	1.72	0.9%	2.20	1.1%
R73	0.49	1.75	0.9%	2.23	1.1%
R74	0.55	1.44	0.7%	1.99	1.0%
R75	0.54	1.33	0.7%	1.86	1.0%
R76	0.41	1.92	1.0%	2.33	1.2%
R77	0.41	2.19	1.1%	2.61	1.3%
R78	0.45	4.20	2.2%	4.65	2.4%
R79	0.54	3.61	1.9%	4.15	2.1%
R80	0.55	1.62	0.8%	2.17	1.1%
R81	0.55	1.69	0.9%	2.24	1.1%
R82	0.54	2.21	1.1%	2.75	1.4%
R83	0.45	3.96	2.0%	4.40	2.3%
R84	0.54	3.79	1.9%	4.33	2.2%
R85	0.54	3.58	1.8%	4.12	2.1%
R86	0.54	4.32	2.2%	4.86	2.5%
R87	0.55	1.64	0.8%	2.19	1.1%
R88	0.54	2.68	1.4%	3.22	1.6%
R89	0.54	1.41	0.7%	1.95	1.0%
R90	0.55	1.67	0.9%	2.23	1.1%
R91	0.55	1.64	0.8%	2.19	1.1%
R92	0.54	1.46	0.7%	2.00	1.0%
R93	0.54	1.27	0.7%	1.82	0.9%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	0.53	2.62	1.3%	3.15	1.6%
R95	0.54	1.64	0.8%	2.18	1.1%
R96	0.54	3.72	1.9%	4.26	2.2%
R97	0.55	1.64	0.8%	2.19	1.1%
R98	0.55	1.93	1.0%	2.48	1.3%
R99	0.55	1.65	0.8%	2.20	1.1%
R100	0.54	1.38	0.7%	1.92	1.0%
R101	0.54	1.42	0.7%	1.96	1.0%
R102	0.54	1.33	0.7%	1.87	1.0%
R103	0.54	1.71	0.9%	2.25	1.2%
R104	0.54	1.29	0.7%	1.83	0.9%
R105	0.54	1.67	0.9%	2.21	1.1%
R106	0.54	1.79	0.9%	2.33	1.2%
R107	0.54	4.32	2.2%	4.86	2.5%
R108	0.53	6.17	3.2%	6.70	3.4%
R109	0.55	1.61	0.8%	2.16	1.1%
R110	0.55	1.74	0.9%	2.29	1.2%
R111	0.55	1.50	0.8%	2.05	1.1%
R112	0.54	1.50	0.8%	2.04	1.0%
R113	0.55	1.43	0.7%	1.98	1.0%
R114	0.55	1.44	0.7%	2.00	1.0%
R115	0.54	1.47	0.8%	2.02	1.0%
R116	0.45	4.95	2.5%	5.40	2.8%
R117	0.54	1.54	0.8%	2.09	1.1%
R118	0.54	1.55	0.8%	2.10	1.1%
R119	0.55	1.51	0.8%	2.06	1.1%
R120	0.54	1.56	0.8%	2.10	1.1%
R121	0.55	1.69	0.9%	2.24	1.1%
R122	0.55	1.70	0.9%	2.25	1.2%
R123	0.55	1.69	0.9%	2.24	1.2%
R124	0.55	1.67	0.9%	2.22	1.1%
R125	0.55	1.83	0.9%	2.38	1.2%
R126	0.55	1.83	0.9%	2.38	1.2%
R127	0.55	1.83	0.9%	2.39	1.2%
R128	0.55	1.83	0.9%	2.39	1.2%
R129	0.55	1.89	1.0%	2.44	1.3%
R130	0.55	1.89	1.0%	2.44	1.3%
R131	0.55	1.88	1.0%	2.43	1.2%
R132	0.55	1.87	1.0%	2.42	1.2%
R133	0.55	1.87	1.0%	2.42	1.2%
R134	0.55	1.86	1.0%	2.42	1.2%
R135	0.55	1.86	1.0%	2.41	1.2%
R136	0.55	1.90	1.0%	2.45	1.3%
R137	0.55	1.89	1.0%	2.44	1.3%
R138	0.55	1.89	1.0%	2.44	1.3%
R139	0.55	1.88	1.0%	2.43	1.2%
R140	0.55	1.88	1.0%	2.43	1.2%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	0.55	1.87	1.0%	2.43	1.2%
R142	0.55	1.87	1.0%	2.42	1.2%
R143	0.55	1.87	1.0%	2.42	1.2%
R144	0.55	1.86	1.0%	2.42	1.2%
R145	0.55	1.67	0.9%	2.23	1.1%
R146	0.55	1.68	0.9%	2.23	1.1%
R147	0.55	1.69	0.9%	2.24	1.1%
R148	0.55	1.69	0.9%	2.25	1.2%
R149	0.55	1.70	0.9%	2.25	1.2%
R150	0.55	1.70	0.9%	2.25	1.2%
R151	0.55	1.70	0.9%	2.26	1.2%
R152	0.55	1.71	0.9%	2.26	1.2%
R153	0.55	1.71	0.9%	2.26	1.2%
R154	0.55	1.70	0.9%	2.25	1.2%
R155	0.55	1.69	0.9%	2.24	1.1%
R156	0.55	1.68	0.9%	2.23	1.1%
R157	0.55	1.67	0.9%	2.23	1.1%
R158	0.55	1.68	0.9%	2.23	1.1%
R159	0.55	1.68	0.9%	2.24	1.1%
R160	0.55	1.80	0.9%	2.35	1.2%
R161	0.55	1.80	0.9%	2.35	1.2%
R162	0.55	1.81	0.9%	2.37	1.2%
R163	0.55	1.82	0.9%	2.37	1.2%
R164	0.55	1.80	0.9%	2.36	1.2%
R165	0.55	1.82	0.9%	2.37	1.2%
R166	0.55	1.82	0.9%	2.37	1.2%
R167	0.55	1.81	0.9%	2.36	1.2%
R168	0.55	1.82	0.9%	2.37	1.2%
R169	0.55	1.83	0.9%	2.38	1.2%
R170	0.55	1.81	0.9%	2.36	1.2%
R171	0.55	1.81	0.9%	2.36	1.2%
R172	0.55	1.82	0.9%	2.38	1.2%
R173	0.55	1.81	0.9%	2.37	1.2%
R174	0.55	1.82	0.9%	2.37	1.2%
R175	0.55	1.82	0.9%	2.37	1.2%
R176	0.55	1.82	0.9%	2.37	1.2%
R177	0.55	1.82	0.9%	2.37	1.2%
R178	0.55	1.82	0.9%	2.38	1.2%
R179	0.55	1.80	0.9%	2.35	1.2%
R180	0.55	1.80	0.9%	2.35	1.2%
R181	0.55	1.80	0.9%	2.35	1.2%
R182	0.55	1.80	0.9%	2.36	1.2%
R183	0.55	1.80	0.9%	2.36	1.2%
R184	0.55	1.81	0.9%	2.36	1.2%
R185	0.55	1.81	0.9%	2.36	1.2%
R186	0.55	1.81	0.9%	2.37	1.2%
R187	0.55	1.82	0.9%	2.37	1.2%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	0.55	1.82	0.9%	2.37	1.2%
R189	0.55	1.82	0.9%	2.37	1.2%
R190	0.55	1.82	0.9%	2.37	1.2%
R191	0.55	1.80	0.9%	2.35	1.2%
R192	0.55	1.79	0.9%	2.34	1.2%
R193	0.55	1.79	0.9%	2.34	1.2%
R194	0.55	1.79	0.9%	2.34	1.2%
R195	0.55	1.79	0.9%	2.34	1.2%
R196	0.55	1.79	0.9%	2.34	1.2%
R197	0.55	1.79	0.9%	2.34	1.2%
R198	0.55	1.79	0.9%	2.34	1.2%
R199	0.55	1.79	0.9%	2.34	1.2%
R200	0.55	1.79	0.9%	2.35	1.2%
R201	0.55	1.79	0.9%	2.34	1.2%
R202	0.55	1.79	0.9%	2.34	1.2%
R203	0.55	1.80	0.9%	2.35	1.2%
R204	0.55	1.79	0.9%	2.35	1.2%
R205	0.55	1.79	0.9%	2.34	1.2%
R206	0.55	1.78	0.9%	2.34	1.2%
R207	0.55	1.78	0.9%	2.33	1.2%
R208	0.55	1.78	0.9%	2.33	1.2%
R209	0.55	1.79	0.9%	2.34	1.2%
R210	0.55	1.78	0.9%	2.33	1.2%
R211	0.55	1.79	0.9%	2.34	1.2%
R212	0.55	1.79	0.9%	2.34	1.2%
R213	0.55	1.78	0.9%	2.33	1.2%
R214	0.54	1.75	0.9%	2.29	1.2%
R215	0.54	1.75	0.9%	2.29	1.2%
R216	0.54	1.75	0.9%	2.29	1.2%
R217	0.54	1.74	0.9%	2.29	1.2%
R218	0.54	1.74	0.9%	2.28	1.2%
R219	0.54	1.74	0.9%	2.28	1.2%
R220	0.54	1.73	0.9%	2.27	1.2%
R221	0.54	1.74	0.9%	2.29	1.2%
R222	0.54	1.75	0.9%	2.29	1.2%
R223	0.54	1.75	0.9%	2.29	1.2%
R224	0.54	1.76	0.9%	2.30	1.2%
R225	0.54	1.73	0.9%	2.27	1.2%
R226	0.54	1.72	0.9%	2.26	1.2%
R227	0.54	1.72	0.9%	2.26	1.2%
R228	0.54	1.72	0.9%	2.26	1.2%
R229	0.54	1.74	0.9%	2.28	1.2%
R230	0.54	1.73	0.9%	2.28	1.2%
R231	0.54	1.72	0.9%	2.27	1.2%
R232	0.54	1.73	0.9%	2.27	1.2%
R233	0.54	1.73	0.9%	2.27	1.2%
R234	0.54	1.73	0.9%	2.27	1.2%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	0.54	1.73	0.9%	2.27	1.2%
R236	0.54	1.73	0.9%	2.27	1.2%
R237	0.54	1.72	0.9%	2.27	1.2%
R238	0.54	1.72	0.9%	2.27	1.2%
R239	0.54	1.72	0.9%	2.26	1.2%
R240	0.54	1.71	0.9%	2.25	1.2%
R241	0.54	1.71	0.9%	2.25	1.2%
R242	0.54	1.71	0.9%	2.25	1.2%
R243	0.54	1.70	0.9%	2.25	1.2%
R244	0.54	1.70	0.9%	2.25	1.2%
R245	0.54	1.70	0.9%	2.25	1.2%
R246	0.54	1.70	0.9%	2.25	1.2%
R247	0.54	1.70	0.9%	2.24	1.1%
R248	0.54	1.70	0.9%	2.24	1.2%
R249	0.54	1.70	0.9%	2.24	1.2%
R250	0.54	1.71	0.9%	2.25	1.2%
R251	0.54	1.70	0.9%	2.24	1.2%
R252	0.54	1.71	0.9%	2.25	1.2%
R253	0.49	1.84	0.9%	2.33	1.2%
R254	0.54	1.37	0.7%	1.91	1.0%
R255	0.54	1.38	0.7%	1.92	1.0%
R256	0.54	1.39	0.7%	1.93	1.0%
R257	0.54	1.39	0.7%	1.93	1.0%
R258	0.54	1.38	0.7%	1.92	1.0%
R259	0.54	1.38	0.7%	1.92	1.0%
R260	0.54	1.39	0.7%	1.93	1.0%
R261	0.54	1.39	0.7%	1.94	1.0%
R262	0.54	1.38	0.7%	1.93	1.0%
R263	0.54	1.31	0.7%	1.85	1.0%
R264	0.54	1.32	0.7%	1.86	1.0%
R265	0.54	1.32	0.7%	1.86	1.0%
R266	0.54	1.32	0.7%	1.86	1.0%
R267	0.54	1.32	0.7%	1.86	1.0%
R268	0.54	1.32	0.7%	1.86	1.0%
R269	0.54	1.32	0.7%	1.86	1.0%
R270	0.54	1.32	0.7%	1.86	1.0%
R271	0.54	1.32	0.7%	1.86	1.0%
R272	0.54	1.32	0.7%	1.86	1.0%
R273	0.54	1.32	0.7%	1.86	1.0%
R274	0.54	1.32	0.7%	1.86	1.0%
R275	0.54	1.32	0.7%	1.86	1.0%
R276	0.54	1.32	0.7%	1.86	1.0%
R277	0.54	1.32	0.7%	1.86	1.0%
R278	0.54	1.32	0.7%	1.86	1.0%
R279	0.54	1.32	0.7%	1.86	1.0%
R280	0.54	1.32	0.7%	1.86	1.0%
R281	0.54	1.32	0.7%	1.86	1.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	0.54	1.32	0.7%	1.86	1.0%
R283	0.54	1.32	0.7%	1.86	1.0%
R284	0.54	1.37	0.7%	1.91	1.0%
R285	0.54	1.37	0.7%	1.91	1.0%
R286	0.54	1.37	0.7%	1.91	1.0%
R287	0.54	1.37	0.7%	1.91	1.0%
R288	0.54	1.37	0.7%	1.91	1.0%
R289	0.54	1.37	0.7%	1.91	1.0%
R290	0.54	1.37	0.7%	1.91	1.0%
R291	0.54	1.37	0.7%	1.91	1.0%
R292	0.54	1.37	0.7%	1.91	1.0%
R293	0.54	1.37	0.7%	1.91	1.0%
R294	0.54	1.37	0.7%	1.91	1.0%
R295	0.54	1.52	0.8%	2.07	1.1%
R296	0.55	1.60	0.8%	2.15	1.1%
R297	0.55	1.69	0.9%	2.24	1.1%
R298	0.55	1.69	0.9%	2.24	1.2%
R299	0.54	2.27	1.2%	2.81	1.4%
R300	0.54	2.28	1.2%	2.82	1.4%
R301	0.54	1.25	0.6%	1.79	0.9%
R302	0.54	1.32	0.7%	1.86	1.0%
R303	0.54	1.34	0.7%	1.88	1.0%
R304	0.54	1.27	0.6%	1.81	0.9%
R305	0.54	1.93	1.0%	2.48	1.3%
R306	0.55	2.14	1.1%	2.69	1.4%
R307	0.53	2.15	1.1%	2.69	1.4%
R308	0.55	1.57	0.8%	2.12	1.1%
R309	0.55	1.70	0.9%	2.25	1.2%
R310	0.54	1.23	0.6%	1.77	0.9%
R311	0.54	2.28	1.2%	2.82	1.4%
R312	0.54	2.28	1.2%	2.82	1.4%
R313	0.54	2.28	1.2%	2.82	1.4%
R314	0.54	2.28	1.2%	2.82	1.4%
R315	0.54	2.27	1.2%	2.81	1.4%
R316	0.54	1.44	0.7%	1.98	1.0%
R317	0.54	1.27	0.7%	1.81	0.9%
R318	0.55	1.46	0.8%	2.01	1.0%
R319	0.55	1.46	0.8%	2.01	1.0%
R320	0.46	1.87	1.0%	2.33	1.2%
R321	0.46	1.44	0.7%	1.90	1.0%
R322	0.46	1.77	0.9%	2.24	1.1%
R323	0.46	1.53	0.8%	2.00	1.0%
R324	0.41	1.38	0.7%	1.78	0.9%
R325	0.46	1.62	0.8%	2.08	1.1%
R326	0.46	1.49	0.8%	1.94	1.0%
R327	0.46	1.37	0.7%	1.83	0.9%
R328	0.46	1.33	0.7%	1.79	0.9%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
R329	0.41	1.44	0.7%	1.85	0.9%
R330	0.41	1.19	0.6%	1.60	0.8%
R331	0.50	1.36	0.7%	1.86	1.0%
R332	0.50	1.29	0.7%	1.80	0.9%
R333	0.40	0.86	0.4%	1.26	0.6%
R334	0.40	0.84	0.4%	1.24	0.6%
R335	0.40	0.84	0.4%	1.24	0.6%
R336	0.50	1.42	0.7%	1.92	1.0%
R337	0.50	1.42	0.7%	1.92	1.0%
R338	0.50	1.39	0.7%	1.89	1.0%

**Table 8B.H16 Modelled 1-hour Mean HF Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	6.00	0.61	0.4%	6.61	4.1%
R2	6.00	0.85	0.5%	6.85	4.3%
R3	6.00	0.82	0.5%	6.82	4.3%
R4	6.00	0.59	0.4%	6.59	4.1%
R5	6.00	0.93	0.6%	6.93	4.3%
R6	6.00	0.99	0.6%	6.99	4.4%
R7	6.00	0.80	0.5%	6.80	4.3%
R8	6.00	0.61	0.4%	6.61	4.1%
R9	6.00	0.52	0.3%	6.52	4.1%
R10	6.00	0.42	0.3%	6.42	4.0%
R11	6.00	0.49	0.3%	6.49	4.1%
R12	6.00	0.34	0.2%	6.34	4.0%
R13	6.00	0.37	0.2%	6.37	4.0%
R14	6.00	0.45	0.3%	6.45	4.0%
R15	6.00	0.50	0.3%	6.50	4.1%
R16	6.00	0.57	0.4%	6.57	4.1%
R17	6.00	0.67	0.4%	6.67	4.2%
R18	6.00	0.60	0.4%	6.60	4.1%
R19	6.00	0.59	0.4%	6.59	4.1%
R20	6.00	0.66	0.4%	6.66	4.2%
R21	6.00	0.62	0.4%	6.62	4.1%
R22	6.00	0.53	0.3%	6.53	4.1%
R23	6.00	0.52	0.3%	6.52	4.1%
R24	6.00	0.49	0.3%	6.49	4.1%
R26	6.00	0.48	0.3%	6.48	4.1%
R27	6.00	0.57	0.4%	6.57	4.1%
R28	6.00	0.38	0.2%	6.38	4.0%
R29	6.00	0.54	0.3%	6.54	4.1%
R30	6.00	0.44	0.3%	6.44	4.0%
R31	6.00	0.45	0.3%	6.45	4.0%
R32	6.00	0.45	0.3%	6.45	4.0%
R33	6.00	0.43	0.3%	6.43	4.0%
R34	6.00	0.39	0.2%	6.39	4.0%
R35	6.00	0.42	0.3%	6.42	4.0%
R36	6.00	0.42	0.3%	6.42	4.0%
R37	6.00	0.39	0.2%	6.39	4.0%
R38	6.00	0.45	0.3%	6.45	4.0%
R39	6.00	0.48	0.3%	6.48	4.0%
R40	6.00	0.46	0.3%	6.46	4.0%
R41	6.00	0.45	0.3%	6.45	4.0%
R42	6.00	0.44	0.3%	6.44	4.0%
R43	6.00	0.44	0.3%	6.44	4.0%
R44	6.00	0.40	0.3%	6.40	4.0%
R45	6.00	0.34	0.2%	6.34	4.0%
R46	6.00	0.39	0.2%	6.39	4.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	6.00	0.36	0.2%	6.36	4.0%
R48	6.00	0.33	0.2%	6.33	4.0%
R49	6.00	0.33	0.2%	6.33	4.0%
R50	6.00	0.29	0.2%	6.29	3.9%
R51	6.00	0.28	0.2%	6.28	3.9%
R52	6.00	0.27	0.2%	6.27	3.9%
R53	6.00	0.30	0.2%	6.30	3.9%
R54	6.00	0.34	0.2%	6.34	4.0%
R55	6.00	0.32	0.2%	6.32	4.0%
R56	6.00	0.38	0.2%	6.38	4.0%
R57	6.00	0.48	0.3%	6.48	4.1%
R58	6.00	0.50	0.3%	6.50	4.1%
R59	6.00	0.51	0.3%	6.51	4.1%
R60	6.00	0.37	0.2%	6.37	4.0%
R61	6.00	0.45	0.3%	6.45	4.0%
R62	6.00	0.41	0.3%	6.41	4.0%
R63	6.00	0.39	0.2%	6.39	4.0%
R64	6.00	0.37	0.2%	6.37	4.0%
R65	6.00	0.34	0.2%	6.34	4.0%
R66	6.00	0.32	0.2%	6.32	4.0%
R67	6.00	0.34	0.2%	6.34	4.0%
R68	6.00	0.40	0.2%	6.40	4.0%
R69	6.00	0.56	0.3%	6.56	4.1%
R70	6.00	0.27	0.2%	6.27	3.9%
R71	6.00	0.32	0.2%	6.32	3.9%
R72	6.00	0.34	0.2%	6.34	4.0%
R73	6.00	0.35	0.2%	6.35	4.0%
R74	6.00	0.29	0.2%	6.29	3.9%
R75	6.00	0.27	0.2%	6.27	3.9%
R76	6.00	0.38	0.2%	6.38	4.0%
R77	6.00	0.44	0.3%	6.44	4.0%
R78	6.00	0.84	0.5%	6.84	4.3%
R79	6.00	0.72	0.5%	6.72	4.2%
R80	6.00	0.32	0.2%	6.32	4.0%
R81	6.00	0.34	0.2%	6.34	4.0%
R82	6.00	0.44	0.3%	6.44	4.0%
R83	6.00	0.79	0.5%	6.79	4.2%
R84	6.00	0.76	0.5%	6.76	4.2%
R85	6.00	0.72	0.4%	6.72	4.2%
R86	6.00	0.86	0.5%	6.86	4.3%
R87	6.00	0.33	0.2%	6.33	4.0%
R88	6.00	0.54	0.3%	6.54	4.1%
R89	6.00	0.28	0.2%	6.28	3.9%
R90	6.00	0.33	0.2%	6.33	4.0%
R91	6.00	0.33	0.2%	6.33	4.0%
R92	6.00	0.29	0.2%	6.29	3.9%
R93	6.00	0.25	0.2%	6.25	3.9%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	6.00	0.52	0.3%	6.52	4.1%
R95	6.00	0.33	0.2%	6.33	4.0%
R96	6.00	0.74	0.5%	6.74	4.2%
R97	6.00	0.33	0.2%	6.33	4.0%
R98	6.00	0.39	0.2%	6.39	4.0%
R99	6.00	0.33	0.2%	6.33	4.0%
R100	6.00	0.28	0.2%	6.28	3.9%
R101	6.00	0.28	0.2%	6.28	3.9%
R102	6.00	0.27	0.2%	6.27	3.9%
R103	6.00	0.34	0.2%	6.34	4.0%
R104	6.00	0.26	0.2%	6.26	3.9%
R105	6.00	0.33	0.2%	6.33	4.0%
R106	6.00	0.36	0.2%	6.36	4.0%
R107	6.00	0.86	0.5%	6.86	4.3%
R108	6.00	1.23	0.8%	7.23	4.5%
R109	6.00	0.32	0.2%	6.32	4.0%
R110	6.00	0.35	0.2%	6.35	4.0%
R111	6.00	0.30	0.2%	6.30	3.9%
R112	6.00	0.30	0.2%	6.30	3.9%
R113	6.00	0.29	0.2%	6.29	3.9%
R114	6.00	0.29	0.2%	6.29	3.9%
R115	6.00	0.29	0.2%	6.29	3.9%
R116	6.00	0.99	0.6%	6.99	4.4%
R117	6.00	0.31	0.2%	6.31	3.9%
R118	6.00	0.31	0.2%	6.31	3.9%
R119	6.00	0.30	0.2%	6.30	3.9%
R120	6.00	0.31	0.2%	6.31	3.9%
R121	6.00	0.34	0.2%	6.34	4.0%
R122	6.00	0.34	0.2%	6.34	4.0%
R123	6.00	0.34	0.2%	6.34	4.0%
R124	6.00	0.33	0.2%	6.33	4.0%
R125	6.00	0.37	0.2%	6.37	4.0%
R126	6.00	0.37	0.2%	6.37	4.0%
R127	6.00	0.37	0.2%	6.37	4.0%
R128	6.00	0.37	0.2%	6.37	4.0%
R129	6.00	0.38	0.2%	6.38	4.0%
R130	6.00	0.38	0.2%	6.38	4.0%
R131	6.00	0.38	0.2%	6.38	4.0%
R132	6.00	0.37	0.2%	6.37	4.0%
R133	6.00	0.37	0.2%	6.37	4.0%
R134	6.00	0.37	0.2%	6.37	4.0%
R135	6.00	0.37	0.2%	6.37	4.0%
R136	6.00	0.38	0.2%	6.38	4.0%
R137	6.00	0.38	0.2%	6.38	4.0%
R138	6.00	0.38	0.2%	6.38	4.0%
R139	6.00	0.38	0.2%	6.38	4.0%
R140	6.00	0.38	0.2%	6.38	4.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	6.00	0.37	0.2%	6.37	4.0%
R142	6.00	0.37	0.2%	6.37	4.0%
R143	6.00	0.37	0.2%	6.37	4.0%
R144	6.00	0.37	0.2%	6.37	4.0%
R145	6.00	0.33	0.2%	6.33	4.0%
R146	6.00	0.34	0.2%	6.34	4.0%
R147	6.00	0.34	0.2%	6.34	4.0%
R148	6.00	0.34	0.2%	6.34	4.0%
R149	6.00	0.34	0.2%	6.34	4.0%
R150	6.00	0.34	0.2%	6.34	4.0%
R151	6.00	0.34	0.2%	6.34	4.0%
R152	6.00	0.34	0.2%	6.34	4.0%
R153	6.00	0.34	0.2%	6.34	4.0%
R154	6.00	0.34	0.2%	6.34	4.0%
R155	6.00	0.34	0.2%	6.34	4.0%
R156	6.00	0.34	0.2%	6.34	4.0%
R157	6.00	0.33	0.2%	6.33	4.0%
R158	6.00	0.34	0.2%	6.34	4.0%
R159	6.00	0.34	0.2%	6.34	4.0%
R160	6.00	0.36	0.2%	6.36	4.0%
R161	6.00	0.36	0.2%	6.36	4.0%
R162	6.00	0.36	0.2%	6.36	4.0%
R163	6.00	0.36	0.2%	6.36	4.0%
R164	6.00	0.36	0.2%	6.36	4.0%
R165	6.00	0.36	0.2%	6.36	4.0%
R166	6.00	0.36	0.2%	6.36	4.0%
R167	6.00	0.36	0.2%	6.36	4.0%
R168	6.00	0.36	0.2%	6.36	4.0%
R169	6.00	0.37	0.2%	6.37	4.0%
R170	6.00	0.36	0.2%	6.36	4.0%
R171	6.00	0.36	0.2%	6.36	4.0%
R172	6.00	0.36	0.2%	6.36	4.0%
R173	6.00	0.36	0.2%	6.36	4.0%
R174	6.00	0.36	0.2%	6.36	4.0%
R175	6.00	0.36	0.2%	6.36	4.0%
R176	6.00	0.36	0.2%	6.36	4.0%
R177	6.00	0.36	0.2%	6.36	4.0%
R178	6.00	0.36	0.2%	6.36	4.0%
R179	6.00	0.36	0.2%	6.36	4.0%
R180	6.00	0.36	0.2%	6.36	4.0%
R181	6.00	0.36	0.2%	6.36	4.0%
R182	6.00	0.36	0.2%	6.36	4.0%
R183	6.00	0.36	0.2%	6.36	4.0%
R184	6.00	0.36	0.2%	6.36	4.0%
R185	6.00	0.36	0.2%	6.36	4.0%
R186	6.00	0.36	0.2%	6.36	4.0%
R187	6.00	0.36	0.2%	6.36	4.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	6.00	0.36	0.2%	6.36	4.0%
R189	6.00	0.36	0.2%	6.36	4.0%
R190	6.00	0.36	0.2%	6.36	4.0%
R191	6.00	0.36	0.2%	6.36	4.0%
R192	6.00	0.36	0.2%	6.36	4.0%
R193	6.00	0.36	0.2%	6.36	4.0%
R194	6.00	0.36	0.2%	6.36	4.0%
R195	6.00	0.36	0.2%	6.36	4.0%
R196	6.00	0.36	0.2%	6.36	4.0%
R197	6.00	0.36	0.2%	6.36	4.0%
R198	6.00	0.36	0.2%	6.36	4.0%
R199	6.00	0.36	0.2%	6.36	4.0%
R200	6.00	0.36	0.2%	6.36	4.0%
R201	6.00	0.36	0.2%	6.36	4.0%
R202	6.00	0.36	0.2%	6.36	4.0%
R203	6.00	0.36	0.2%	6.36	4.0%
R204	6.00	0.36	0.2%	6.36	4.0%
R205	6.00	0.36	0.2%	6.36	4.0%
R206	6.00	0.36	0.2%	6.36	4.0%
R207	6.00	0.36	0.2%	6.36	4.0%
R208	6.00	0.36	0.2%	6.36	4.0%
R209	6.00	0.36	0.2%	6.36	4.0%
R210	6.00	0.36	0.2%	6.36	4.0%
R211	6.00	0.36	0.2%	6.36	4.0%
R212	6.00	0.36	0.2%	6.36	4.0%
R213	6.00	0.36	0.2%	6.36	4.0%
R214	6.00	0.35	0.2%	6.35	4.0%
R215	6.00	0.35	0.2%	6.35	4.0%
R216	6.00	0.35	0.2%	6.35	4.0%
R217	6.00	0.35	0.2%	6.35	4.0%
R218	6.00	0.35	0.2%	6.35	4.0%
R219	6.00	0.35	0.2%	6.35	4.0%
R220	6.00	0.35	0.2%	6.35	4.0%
R221	6.00	0.35	0.2%	6.35	4.0%
R222	6.00	0.35	0.2%	6.35	4.0%
R223	6.00	0.35	0.2%	6.35	4.0%
R224	6.00	0.35	0.2%	6.35	4.0%
R225	6.00	0.35	0.2%	6.35	4.0%
R226	6.00	0.34	0.2%	6.34	4.0%
R227	6.00	0.34	0.2%	6.34	4.0%
R228	6.00	0.34	0.2%	6.34	4.0%
R229	6.00	0.35	0.2%	6.35	4.0%
R230	6.00	0.35	0.2%	6.35	4.0%
R231	6.00	0.34	0.2%	6.34	4.0%
R232	6.00	0.35	0.2%	6.35	4.0%
R233	6.00	0.35	0.2%	6.35	4.0%
R234	6.00	0.35	0.2%	6.35	4.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	6.00	0.35	0.2%	6.35	4.0%
R236	6.00	0.35	0.2%	6.35	4.0%
R237	6.00	0.34	0.2%	6.34	4.0%
R238	6.00	0.34	0.2%	6.34	4.0%
R239	6.00	0.34	0.2%	6.34	4.0%
R240	6.00	0.34	0.2%	6.34	4.0%
R241	6.00	0.34	0.2%	6.34	4.0%
R242	6.00	0.34	0.2%	6.34	4.0%
R243	6.00	0.34	0.2%	6.34	4.0%
R244	6.00	0.34	0.2%	6.34	4.0%
R245	6.00	0.34	0.2%	6.34	4.0%
R246	6.00	0.34	0.2%	6.34	4.0%
R247	6.00	0.34	0.2%	6.34	4.0%
R248	6.00	0.34	0.2%	6.34	4.0%
R249	6.00	0.34	0.2%	6.34	4.0%
R250	6.00	0.34	0.2%	6.34	4.0%
R251	6.00	0.34	0.2%	6.34	4.0%
R252	6.00	0.34	0.2%	6.34	4.0%
R253	6.00	0.37	0.2%	6.37	4.0%
R254	6.00	0.27	0.2%	6.27	3.9%
R255	6.00	0.28	0.2%	6.28	3.9%
R256	6.00	0.28	0.2%	6.28	3.9%
R257	6.00	0.28	0.2%	6.28	3.9%
R258	6.00	0.28	0.2%	6.28	3.9%
R259	6.00	0.28	0.2%	6.28	3.9%
R260	6.00	0.28	0.2%	6.28	3.9%
R261	6.00	0.28	0.2%	6.28	3.9%
R262	6.00	0.28	0.2%	6.28	3.9%
R263	6.00	0.26	0.2%	6.26	3.9%
R264	6.00	0.26	0.2%	6.26	3.9%
R265	6.00	0.26	0.2%	6.26	3.9%
R266	6.00	0.26	0.2%	6.26	3.9%
R267	6.00	0.26	0.2%	6.26	3.9%
R268	6.00	0.26	0.2%	6.26	3.9%
R269	6.00	0.26	0.2%	6.26	3.9%
R270	6.00	0.26	0.2%	6.26	3.9%
R271	6.00	0.26	0.2%	6.26	3.9%
R272	6.00	0.26	0.2%	6.26	3.9%
R273	6.00	0.26	0.2%	6.26	3.9%
R274	6.00	0.26	0.2%	6.26	3.9%
R275	6.00	0.26	0.2%	6.26	3.9%
R276	6.00	0.26	0.2%	6.26	3.9%
R277	6.00	0.26	0.2%	6.26	3.9%
R278	6.00	0.26	0.2%	6.26	3.9%
R279	6.00	0.26	0.2%	6.26	3.9%
R280	6.00	0.26	0.2%	6.26	3.9%
R281	6.00	0.26	0.2%	6.26	3.9%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	6.00	0.26	0.2%	6.26	3.9%
R283	6.00	0.26	0.2%	6.26	3.9%
R284	6.00	0.27	0.2%	6.27	3.9%
R285	6.00	0.27	0.2%	6.27	3.9%
R286	6.00	0.27	0.2%	6.27	3.9%
R287	6.00	0.27	0.2%	6.27	3.9%
R288	6.00	0.27	0.2%	6.27	3.9%
R289	6.00	0.27	0.2%	6.27	3.9%
R290	6.00	0.27	0.2%	6.27	3.9%
R291	6.00	0.27	0.2%	6.27	3.9%
R292	6.00	0.27	0.2%	6.27	3.9%
R293	6.00	0.27	0.2%	6.27	3.9%
R294	6.00	0.27	0.2%	6.27	3.9%
R295	6.00	0.30	0.2%	6.30	3.9%
R296	6.00	0.32	0.2%	6.32	3.9%
R297	6.00	0.34	0.2%	6.34	4.0%
R298	6.00	0.34	0.2%	6.34	4.0%
R299	6.00	0.45	0.3%	6.45	4.0%
R300	6.00	0.46	0.3%	6.46	4.0%
R301	6.00	0.25	0.2%	6.25	3.9%
R302	6.00	0.26	0.2%	6.26	3.9%
R303	6.00	0.27	0.2%	6.27	3.9%
R304	6.00	0.25	0.2%	6.25	3.9%
R305	6.00	0.39	0.2%	6.39	4.0%
R306	6.00	0.43	0.3%	6.43	4.0%
R307	6.00	0.43	0.3%	6.43	4.0%
R308	6.00	0.31	0.2%	6.31	3.9%
R309	6.00	0.34	0.2%	6.34	4.0%
R310	6.00	0.25	0.2%	6.25	3.9%
R311	6.00	0.46	0.3%	6.46	4.0%
R312	6.00	0.46	0.3%	6.46	4.0%
R313	6.00	0.46	0.3%	6.46	4.0%
R314	6.00	0.46	0.3%	6.46	4.0%
R315	6.00	0.45	0.3%	6.45	4.0%
R316	6.00	0.29	0.2%	6.29	3.9%
R317	6.00	0.25	0.2%	6.25	3.9%
R318	6.00	0.29	0.2%	6.29	3.9%
R319	6.00	0.29	0.2%	6.29	3.9%
R320	6.00	0.37	0.2%	6.37	4.0%
R321	6.00	0.29	0.2%	6.29	3.9%
R322	6.00	0.35	0.2%	6.35	4.0%
R323	6.00	0.31	0.2%	6.31	3.9%
R324	6.00	0.28	0.2%	6.28	3.9%
R325	6.00	0.32	0.2%	6.32	4.0%
R326	6.00	0.30	0.2%	6.30	3.9%
R327	6.00	0.27	0.2%	6.27	3.9%
R328	6.00	0.27	0.2%	6.27	3.9%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
R329	6.00	0.29	0.2%	6.29	3.9%
R330	6.00	0.24	0.1%	6.24	3.9%
R331	6.00	0.27	0.2%	6.27	3.9%
R332	6.00	0.26	0.2%	6.26	3.9%
R333	6.00	0.17	0.1%	6.17	3.9%
R334	6.00	0.17	0.1%	6.17	3.9%
R335	6.00	0.17	0.1%	6.17	3.9%
R336	6.00	0.28	0.2%	6.28	3.9%
R337	6.00	0.28	0.2%	6.28	3.9%
R338	6.00	0.28	0.2%	6.28	3.9%

**Table 8B.H17 Modelled 1-hour Mean HF Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	0.42	9.12	1.2%	9.54	1.3%
R2	0.42	12.82	1.7%	13.24	1.8%
R3	0.42	12.29	1.6%	12.71	1.7%
R4	0.42	8.87	1.2%	9.29	1.2%
R5	0.42	14.01	1.9%	14.43	1.9%
R6	0.42	14.78	2.0%	15.20	2.0%
R7	0.42	12.04	1.6%	12.46	1.7%
R8	0.42	9.15	1.2%	9.57	1.3%
R9	0.42	7.73	1.0%	8.15	1.1%
R10	0.42	6.30	0.8%	6.72	0.9%
R11	0.42	7.39	1.0%	7.81	1.0%
R12	0.42	5.13	0.7%	5.55	0.7%
R13	0.42	5.50	0.7%	5.92	0.8%
R14	0.42	6.72	0.9%	7.14	1.0%
R15	0.42	7.52	1.0%	7.94	1.1%
R16	0.42	8.59	1.1%	9.01	1.2%
R17	0.42	10.12	1.3%	10.54	1.4%
R18	0.42	9.04	1.2%	9.46	1.3%
R19	0.42	8.91	1.2%	9.33	1.2%
R20	0.42	9.84	1.3%	10.26	1.4%
R21	0.42	9.33	1.2%	9.75	1.3%
R22	0.42	7.95	1.1%	8.37	1.1%
R23	0.42	7.81	1.0%	8.23	1.1%
R24	0.42	7.36	1.0%	7.78	1.0%
R26	0.42	7.23	1.0%	7.65	1.0%
R27	0.42	8.50	1.1%	8.92	1.2%
R28	0.42	5.66	0.8%	6.08	0.8%
R29	0.42	8.13	1.1%	8.55	1.1%
R30	0.42	6.64	0.9%	7.06	0.9%
R31	0.42	6.71	0.9%	7.13	1.0%
R32	0.42	6.69	0.9%	7.11	0.9%
R33	0.42	6.38	0.9%	6.80	0.9%
R34	0.42	5.87	0.8%	6.29	0.8%
R35	0.42	6.32	0.8%	6.74	0.9%
R36	0.42	6.36	0.8%	6.78	0.9%
R37	0.42	5.84	0.8%	6.26	0.8%
R38	0.42	6.72	0.9%	7.14	1.0%
R39	0.42	7.13	1.0%	7.55	1.0%
R40	0.42	6.95	0.9%	7.37	1.0%
R41	0.42	6.72	0.9%	7.14	1.0%
R42	0.42	6.66	0.9%	7.08	0.9%
R43	0.42	6.58	0.9%	7.00	0.9%
R44	0.42	6.07	0.8%	6.49	0.9%
R45	0.42	5.12	0.7%	5.54	0.7%
R46	0.42	5.78	0.8%	6.20	0.8%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	0.42	5.36	0.7%	5.78	0.8%
R48	0.42	5.01	0.7%	5.43	0.7%
R49	0.42	5.00	0.7%	5.42	0.7%
R50	0.42	4.40	0.6%	4.82	0.6%
R51	0.42	4.13	0.6%	4.55	0.6%
R52	0.42	4.11	0.5%	4.53	0.6%
R53	0.42	4.43	0.6%	4.85	0.6%
R54	0.42	5.03	0.7%	5.45	0.7%
R55	0.42	4.85	0.6%	5.27	0.7%
R56	0.42	5.71	0.8%	6.13	0.8%
R57	0.42	7.20	1.0%	7.62	1.0%
R58	0.42	7.48	1.0%	7.90	1.1%
R59	0.42	7.66	1.0%	8.08	1.1%
R60	0.42	5.51	0.7%	5.93	0.8%
R61	0.42	6.75	0.9%	7.17	1.0%
R62	0.42	6.11	0.8%	6.53	0.9%
R63	0.42	5.87	0.8%	6.29	0.8%
R64	0.42	5.51	0.7%	5.93	0.8%
R65	0.42	5.15	0.7%	5.57	0.7%
R66	0.42	4.84	0.6%	5.26	0.7%
R67	0.42	5.13	0.7%	5.55	0.7%
R68	0.42	5.99	0.8%	6.41	0.9%
R69	0.42	8.36	1.1%	8.78	1.2%
R70	0.42	4.12	0.5%	4.54	0.6%
R71	0.42	4.76	0.6%	5.18	0.7%
R72	0.42	5.15	0.7%	5.57	0.7%
R73	0.42	5.24	0.7%	5.66	0.8%
R74	0.42	4.32	0.6%	4.74	0.6%
R75	0.42	3.98	0.5%	4.40	0.6%
R76	0.42	5.75	0.8%	6.17	0.8%
R77	0.42	6.58	0.9%	7.00	0.9%
R78	0.42	12.60	1.7%	13.02	1.7%
R79	0.42	10.83	1.4%	11.25	1.5%
R80	0.42	4.86	0.6%	5.28	0.7%
R81	0.42	5.07	0.7%	5.49	0.7%
R82	0.42	6.64	0.9%	7.06	0.9%
R83	0.42	11.87	1.6%	12.29	1.6%
R84	0.42	11.36	1.5%	11.78	1.6%
R85	0.42	10.75	1.4%	11.17	1.5%
R86	0.42	12.97	1.7%	13.39	1.8%
R87	0.42	4.92	0.7%	5.34	0.7%
R88	0.42	8.03	1.1%	8.45	1.1%
R89	0.42	4.22	0.6%	4.64	0.6%
R90	0.42	5.02	0.7%	5.44	0.7%
R91	0.42	4.92	0.7%	5.34	0.7%
R92	0.42	4.38	0.6%	4.80	0.6%
R93	0.42	3.82	0.5%	4.24	0.6%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	0.42	7.85	1.0%	8.27	1.1%
R95	0.42	4.91	0.7%	5.33	0.7%
R96	0.42	11.16	1.5%	11.58	1.5%
R97	0.42	4.91	0.7%	5.33	0.7%
R98	0.42	5.78	0.8%	6.20	0.8%
R99	0.42	4.94	0.7%	5.36	0.7%
R100	0.42	4.13	0.6%	4.55	0.6%
R101	0.42	4.25	0.6%	4.67	0.6%
R102	0.42	4.00	0.5%	4.42	0.6%
R103	0.42	5.14	0.7%	5.56	0.7%
R104	0.42	3.88	0.5%	4.30	0.6%
R105	0.42	5.02	0.7%	5.44	0.7%
R106	0.42	5.37	0.7%	5.79	0.8%
R107	0.42	12.97	1.7%	13.39	1.8%
R108	0.42	18.51	2.5%	18.93	2.5%
R109	0.42	4.82	0.6%	5.24	0.7%
R110	0.42	5.21	0.7%	5.63	0.8%
R111	0.42	4.50	0.6%	4.92	0.7%
R112	0.42	4.50	0.6%	4.92	0.7%
R113	0.42	4.28	0.6%	4.70	0.6%
R114	0.42	4.33	0.6%	4.75	0.6%
R115	0.42	4.42	0.6%	4.84	0.6%
R116	0.42	14.85	2.0%	15.27	2.0%
R117	0.42	4.63	0.6%	5.05	0.7%
R118	0.42	4.66	0.6%	5.08	0.7%
R119	0.42	4.52	0.6%	4.94	0.7%
R120	0.42	4.68	0.6%	5.10	0.7%
R121	0.42	5.07	0.7%	5.49	0.7%
R122	0.42	5.10	0.7%	5.52	0.7%
R123	0.42	5.08	0.7%	5.50	0.7%
R124	0.42	5.02	0.7%	5.44	0.7%
R125	0.42	5.48	0.7%	5.90	0.8%
R126	0.42	5.48	0.7%	5.90	0.8%
R127	0.42	5.50	0.7%	5.92	0.8%
R128	0.42	5.50	0.7%	5.92	0.8%
R129	0.42	5.68	0.8%	6.10	0.8%
R130	0.42	5.66	0.8%	6.08	0.8%
R131	0.42	5.63	0.8%	6.05	0.8%
R132	0.42	5.62	0.7%	6.04	0.8%
R133	0.42	5.60	0.7%	6.02	0.8%
R134	0.42	5.59	0.7%	6.01	0.8%
R135	0.42	5.58	0.7%	6.00	0.8%
R136	0.42	5.69	0.8%	6.11	0.8%
R137	0.42	5.67	0.8%	6.09	0.8%
R138	0.42	5.66	0.8%	6.08	0.8%
R139	0.42	5.64	0.8%	6.06	0.8%
R140	0.42	5.63	0.8%	6.05	0.8%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	0.42	5.62	0.7%	6.04	0.8%
R142	0.42	5.61	0.7%	6.03	0.8%
R143	0.42	5.60	0.7%	6.02	0.8%
R144	0.42	5.59	0.7%	6.01	0.8%
R145	0.42	5.02	0.7%	5.44	0.7%
R146	0.42	5.04	0.7%	5.46	0.7%
R147	0.42	5.06	0.7%	5.48	0.7%
R148	0.42	5.08	0.7%	5.50	0.7%
R149	0.42	5.11	0.7%	5.53	0.7%
R150	0.42	5.11	0.7%	5.53	0.7%
R151	0.42	5.11	0.7%	5.53	0.7%
R152	0.42	5.13	0.7%	5.55	0.7%
R153	0.42	5.13	0.7%	5.55	0.7%
R154	0.42	5.09	0.7%	5.51	0.7%
R155	0.42	5.06	0.7%	5.48	0.7%
R156	0.42	5.03	0.7%	5.45	0.7%
R157	0.42	5.02	0.7%	5.44	0.7%
R158	0.42	5.04	0.7%	5.46	0.7%
R159	0.42	5.05	0.7%	5.47	0.7%
R160	0.42	5.39	0.7%	5.81	0.8%
R161	0.42	5.40	0.7%	5.82	0.8%
R162	0.42	5.44	0.7%	5.86	0.8%
R163	0.42	5.45	0.7%	5.87	0.8%
R164	0.42	5.41	0.7%	5.83	0.8%
R165	0.42	5.46	0.7%	5.88	0.8%
R166	0.42	5.46	0.7%	5.88	0.8%
R167	0.42	5.42	0.7%	5.84	0.8%
R168	0.42	5.47	0.7%	5.89	0.8%
R169	0.42	5.48	0.7%	5.90	0.8%
R170	0.42	5.43	0.7%	5.85	0.8%
R171	0.42	5.43	0.7%	5.85	0.8%
R172	0.42	5.47	0.7%	5.89	0.8%
R173	0.42	5.44	0.7%	5.86	0.8%
R174	0.42	5.45	0.7%	5.87	0.8%
R175	0.42	5.45	0.7%	5.87	0.8%
R176	0.42	5.46	0.7%	5.88	0.8%
R177	0.42	5.47	0.7%	5.89	0.8%
R178	0.42	5.47	0.7%	5.89	0.8%
R179	0.42	5.39	0.7%	5.81	0.8%
R180	0.42	5.40	0.7%	5.82	0.8%
R181	0.42	5.40	0.7%	5.82	0.8%
R182	0.42	5.41	0.7%	5.83	0.8%
R183	0.42	5.41	0.7%	5.83	0.8%
R184	0.42	5.42	0.7%	5.84	0.8%
R185	0.42	5.43	0.7%	5.85	0.8%
R186	0.42	5.44	0.7%	5.86	0.8%
R187	0.42	5.45	0.7%	5.87	0.8%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	0.42	5.45	0.7%	5.87	0.8%
R189	0.42	5.46	0.7%	5.88	0.8%
R190	0.42	5.46	0.7%	5.88	0.8%
R191	0.42	5.39	0.7%	5.81	0.8%
R192	0.42	5.37	0.7%	5.79	0.8%
R193	0.42	5.37	0.7%	5.79	0.8%
R194	0.42	5.37	0.7%	5.79	0.8%
R195	0.42	5.37	0.7%	5.79	0.8%
R196	0.42	5.37	0.7%	5.79	0.8%
R197	0.42	5.37	0.7%	5.79	0.8%
R198	0.42	5.36	0.7%	5.78	0.8%
R199	0.42	5.36	0.7%	5.78	0.8%
R200	0.42	5.38	0.7%	5.80	0.8%
R201	0.42	5.38	0.7%	5.80	0.8%
R202	0.42	5.37	0.7%	5.79	0.8%
R203	0.42	5.39	0.7%	5.81	0.8%
R204	0.42	5.38	0.7%	5.80	0.8%
R205	0.42	5.37	0.7%	5.79	0.8%
R206	0.42	5.35	0.7%	5.77	0.8%
R207	0.42	5.35	0.7%	5.77	0.8%
R208	0.42	5.34	0.7%	5.76	0.8%
R209	0.42	5.36	0.7%	5.78	0.8%
R210	0.42	5.33	0.7%	5.75	0.8%
R211	0.42	5.36	0.7%	5.78	0.8%
R212	0.42	5.36	0.7%	5.78	0.8%
R213	0.42	5.34	0.7%	5.76	0.8%
R214	0.42	5.24	0.7%	5.66	0.8%
R215	0.42	5.24	0.7%	5.66	0.8%
R216	0.42	5.24	0.7%	5.66	0.8%
R217	0.42	5.23	0.7%	5.65	0.8%
R218	0.42	5.22	0.7%	5.64	0.8%
R219	0.42	5.21	0.7%	5.63	0.8%
R220	0.42	5.20	0.7%	5.62	0.7%
R221	0.42	5.23	0.7%	5.65	0.8%
R222	0.42	5.24	0.7%	5.66	0.8%
R223	0.42	5.25	0.7%	5.67	0.8%
R224	0.42	5.27	0.7%	5.69	0.8%
R225	0.42	5.18	0.7%	5.60	0.7%
R226	0.42	5.16	0.7%	5.58	0.7%
R227	0.42	5.15	0.7%	5.57	0.7%
R228	0.42	5.15	0.7%	5.57	0.7%
R229	0.42	5.22	0.7%	5.64	0.8%
R230	0.42	5.20	0.7%	5.62	0.7%
R231	0.42	5.17	0.7%	5.59	0.7%
R232	0.42	5.19	0.7%	5.61	0.7%
R233	0.42	5.19	0.7%	5.61	0.7%
R234	0.42	5.19	0.7%	5.61	0.7%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	0.42	5.19	0.7%	5.61	0.7%
R236	0.42	5.18	0.7%	5.60	0.7%
R237	0.42	5.17	0.7%	5.59	0.7%
R238	0.42	5.17	0.7%	5.59	0.7%
R239	0.42	5.16	0.7%	5.58	0.7%
R240	0.42	5.14	0.7%	5.56	0.7%
R241	0.42	5.14	0.7%	5.56	0.7%
R242	0.42	5.12	0.7%	5.54	0.7%
R243	0.42	5.11	0.7%	5.53	0.7%
R244	0.42	5.11	0.7%	5.53	0.7%
R245	0.42	5.11	0.7%	5.53	0.7%
R246	0.42	5.11	0.7%	5.53	0.7%
R247	0.42	5.10	0.7%	5.52	0.7%
R248	0.42	5.11	0.7%	5.53	0.7%
R249	0.42	5.11	0.7%	5.53	0.7%
R250	0.42	5.12	0.7%	5.54	0.7%
R251	0.42	5.11	0.7%	5.53	0.7%
R252	0.42	5.14	0.7%	5.56	0.7%
R253	0.42	5.51	0.7%	5.93	0.8%
R254	0.42	4.10	0.5%	4.52	0.6%
R255	0.42	4.14	0.6%	4.56	0.6%
R256	0.42	4.16	0.6%	4.58	0.6%
R257	0.42	4.17	0.6%	4.59	0.6%
R258	0.42	4.15	0.6%	4.57	0.6%
R259	0.42	4.15	0.6%	4.57	0.6%
R260	0.42	4.17	0.6%	4.59	0.6%
R261	0.42	4.18	0.6%	4.60	0.6%
R262	0.42	4.15	0.6%	4.57	0.6%
R263	0.42	3.93	0.5%	4.35	0.6%
R264	0.42	3.95	0.5%	4.37	0.6%
R265	0.42	3.95	0.5%	4.37	0.6%
R266	0.42	3.95	0.5%	4.37	0.6%
R267	0.42	3.95	0.5%	4.37	0.6%
R268	0.42	3.95	0.5%	4.37	0.6%
R269	0.42	3.95	0.5%	4.37	0.6%
R270	0.42	3.95	0.5%	4.37	0.6%
R271	0.42	3.95	0.5%	4.37	0.6%
R272	0.42	3.95	0.5%	4.37	0.6%
R273	0.42	3.95	0.5%	4.37	0.6%
R274	0.42	3.95	0.5%	4.37	0.6%
R275	0.42	3.95	0.5%	4.37	0.6%
R276	0.42	3.95	0.5%	4.37	0.6%
R277	0.42	3.95	0.5%	4.37	0.6%
R278	0.42	3.95	0.5%	4.37	0.6%
R279	0.42	3.95	0.5%	4.37	0.6%
R280	0.42	3.95	0.5%	4.37	0.6%
R281	0.42	3.95	0.5%	4.37	0.6%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	0.42	3.95	0.5%	4.37	0.6%
R283	0.42	3.95	0.5%	4.37	0.6%
R284	0.42	4.10	0.5%	4.52	0.6%
R285	0.42	4.10	0.5%	4.52	0.6%
R286	0.42	4.10	0.5%	4.52	0.6%
R287	0.42	4.10	0.5%	4.52	0.6%
R288	0.42	4.10	0.5%	4.52	0.6%
R289	0.42	4.10	0.5%	4.52	0.6%
R290	0.42	4.10	0.5%	4.52	0.6%
R291	0.42	4.10	0.5%	4.52	0.6%
R292	0.42	4.10	0.5%	4.52	0.6%
R293	0.42	4.10	0.5%	4.52	0.6%
R294	0.42	4.10	0.5%	4.52	0.6%
R295	0.42	4.56	0.6%	4.98	0.7%
R296	0.42	4.79	0.6%	5.21	0.7%
R297	0.42	5.06	0.7%	5.48	0.7%
R298	0.42	5.08	0.7%	5.50	0.7%
R299	0.42	6.80	0.9%	7.22	1.0%
R300	0.42	6.85	0.9%	7.27	1.0%
R301	0.42	3.75	0.5%	4.17	0.6%
R302	0.42	3.95	0.5%	4.37	0.6%
R303	0.42	4.02	0.5%	4.44	0.6%
R304	0.42	3.80	0.5%	4.22	0.6%
R305	0.42	5.80	0.8%	6.22	0.8%
R306	0.42	6.42	0.9%	6.84	0.9%
R307	0.42	6.46	0.9%	6.88	0.9%
R308	0.42	4.72	0.6%	5.14	0.7%
R309	0.42	5.09	0.7%	5.51	0.7%
R310	0.42	3.68	0.5%	4.10	0.5%
R311	0.42	6.85	0.9%	7.27	1.0%
R312	0.42	6.84	0.9%	7.26	1.0%
R313	0.42	6.84	0.9%	7.26	1.0%
R314	0.42	6.83	0.9%	7.25	1.0%
R315	0.42	6.82	0.9%	7.24	1.0%
R316	0.42	4.32	0.6%	4.74	0.6%
R317	0.42	3.82	0.5%	4.24	0.6%
R318	0.42	4.39	0.6%	4.81	0.6%
R319	0.42	4.39	0.6%	4.81	0.6%
R320	0.42	5.62	0.7%	6.04	0.8%
R321	0.42	4.33	0.6%	4.75	0.6%
R322	0.42	5.32	0.7%	5.74	0.8%
R323	0.42	4.60	0.6%	5.02	0.7%
R324	0.42	4.14	0.6%	4.56	0.6%
R325	0.42	4.86	0.6%	5.28	0.7%
R326	0.42	4.46	0.6%	4.88	0.7%
R327	0.42	4.12	0.5%	4.54	0.6%
R328	0.42	4.00	0.5%	4.42	0.6%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R329	0.42	4.32	0.6%	4.74	0.6%
R330	0.42	3.58	0.5%	4.00	0.5%
R331	0.42	4.07	0.5%	4.49	0.6%
R332	0.42	3.88	0.5%	4.30	0.6%
R333	0.42	2.59	0.3%	3.01	0.4%
R334	0.42	2.52	0.3%	2.94	0.4%
R335	0.42	2.53	0.3%	2.95	0.4%
R336	0.42	4.25	0.6%	4.67	0.6%
R337	0.42	4.26	0.6%	4.68	0.6%
R338	0.42	4.18	0.6%	4.60	0.6%

**Table 8B.H18 Modelled Annual Mean PAH Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	0.00006	0.000005	0.5%	0.00007	6.5%
R2	0.00006	0.000003	0.3%	0.00006	6.3%
R3	0.00006	0.000006	0.6%	0.00007	6.6%
R4	0.00006	0.000011	1.1%	0.00007	7.1%
R5	0.00006	0.000034	3.4%	0.00009	9.4%
R6	0.00006	0.000015	1.5%	0.00007	7.5%
R7	0.00006	0.000016	1.6%	0.00008	7.6%
R8	0.00006	0.000005	0.5%	0.00007	6.5%
R9	0.00006	0.000010	1.0%	0.00007	7.0%
R10	0.00006	0.000007	0.7%	0.00007	6.7%
R11	0.00006	0.000014	1.4%	0.00007	7.4%
R12	0.00006	0.000006	0.6%	0.00007	6.6%
R13	0.00006	0.000005	0.5%	0.00007	6.5%
R14	0.00006	0.000005	0.5%	0.00006	6.5%
R15	0.00006	0.000006	0.6%	0.00007	6.6%
R16	0.00006	0.000019	1.9%	0.00008	7.9%
R17	0.00006	0.000024	2.4%	0.00008	8.4%
R18	0.00006	0.000025	2.5%	0.00008	8.5%
R19	0.00006	0.000027	2.7%	0.00009	8.7%
R20	0.00006	0.000032	3.2%	0.00009	9.2%
R21	0.00006	0.000030	3.0%	0.00009	9.0%
R22	0.00006	0.000027	2.7%	0.00009	8.7%
R23	0.00006	0.000025	2.5%	0.00008	8.5%
R24	0.00006	0.000024	2.4%	0.00008	8.4%
R26	0.00006	0.000024	2.4%	0.00008	8.4%
R27	0.00006	0.000025	2.5%	0.00009	8.5%
R28	0.00006	0.000019	1.9%	0.00008	7.9%
R29	0.00006	0.000032	3.2%	0.00009	9.2%
R30	0.00006	0.000013	1.3%	0.00007	7.3%
R31	0.00006	0.000013	1.3%	0.00007	7.3%
R32	0.00006	0.000012	1.2%	0.00007	7.2%
R33	0.00006	0.000014	1.4%	0.00007	7.4%
R34	0.00006	0.000015	1.5%	0.00007	7.5%
R35	0.00006	0.000015	1.5%	0.00007	7.5%
R36	0.00006	0.000016	1.6%	0.00008	7.6%
R37	0.00006	0.000017	1.7%	0.00008	7.7%
R38	0.00006	0.000019	1.9%	0.00008	7.9%
R39	0.00006	0.000021	2.1%	0.00008	8.1%
R40	0.00006	0.000025	2.5%	0.00008	8.5%
R41	0.00006	0.000022	2.2%	0.00008	8.2%
R42	0.00006	0.000024	2.4%	0.00008	8.4%
R43	0.00006	0.000024	2.4%	0.00008	8.4%
R44	0.00006	0.000025	2.5%	0.00009	8.5%
R45	0.00006	0.000023	2.3%	0.00008	8.3%
R46	0.00006	0.000027	2.7%	0.00009	8.7%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	0.00006	0.000024	2.4%	0.00008	8.4%
R48	0.00006	0.000022	2.2%	0.00008	8.2%
R49	0.00006	0.000020	2.0%	0.00008	8.0%
R50	0.00006	0.000017	1.7%	0.00008	7.7%
R51	0.00006	0.000014	1.4%	0.00007	7.4%
R52	0.00006	0.000013	1.3%	0.00007	7.3%
R53	0.00006	0.000012	1.2%	0.00007	7.2%
R54	0.00006	0.000012	1.2%	0.00007	7.2%
R55	0.00006	0.000018	1.8%	0.00008	7.8%
R56	0.00006	0.000026	2.6%	0.00009	8.6%
R57	0.00006	0.000034	3.4%	0.00009	9.4%
R58	0.00006	0.000035	3.5%	0.00009	9.5%
R59	0.00006	0.000026	2.6%	0.00009	8.6%
R60	0.00006	0.000008	0.8%	0.00007	6.8%
R61	0.00006	0.000026	2.6%	0.00009	8.6%
R62	0.00006	0.000027	2.7%	0.00009	8.7%
R63	0.00006	0.000020	2.0%	0.00008	8.0%
R64	0.00006	0.000021	2.1%	0.00008	8.1%
R65	0.00006	0.000022	2.2%	0.00008	8.2%
R66	0.00006	0.000014	1.4%	0.00007	7.4%
R67	0.00006	0.000008	0.8%	0.00007	6.8%
R68	0.00006	0.000008	0.8%	0.00007	6.8%
R69	0.00006	0.000010	1.0%	0.00007	7.0%
R70	0.00006	0.000002	0.2%	0.00006	6.2%
R71	0.00006	0.000003	0.3%	0.00006	6.3%
R72	0.00006	0.000016	1.6%	0.00008	7.6%
R73	0.00006	0.000012	1.2%	0.00007	7.2%
R74	0.00006	0.000015	1.5%	0.00008	7.5%
R75	0.00006	0.000006	0.6%	0.00007	6.6%
R76	0.00006	0.000010	1.0%	0.00007	7.0%
R77	0.00006	0.000009	0.9%	0.00007	6.9%
R78	0.00006	0.000012	1.2%	0.00007	7.2%
R79	0.00006	0.000042	4.2%	0.00010	10.2%
R80	0.00006	0.000020	2.0%	0.00008	8.0%
R81	0.00006	0.000019	1.9%	0.00008	7.9%
R82	0.00006	0.000025	2.5%	0.00009	8.5%
R83	0.00006	0.000001	0.1%	0.00006	6.1%
R84	0.00006	0.000044	4.4%	0.00010	10.4%
R85	0.00006	0.000043	4.3%	0.00010	10.3%
R86	0.00006	0.000042	4.2%	0.00010	10.2%
R87	0.00006	0.000022	2.2%	0.00008	8.2%
R88	0.00006	0.000029	2.9%	0.00009	8.9%
R89	0.00006	0.000011	1.1%	0.00007	7.1%
R90	0.00006	0.000023	2.3%	0.00008	8.3%
R91	0.00006	0.000022	2.2%	0.00008	8.2%
R92	0.00006	0.000013	1.3%	0.00007	7.3%
R93	0.00006	0.000011	1.1%	0.00007	7.1%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	0.00006	0.000016	1.6%	0.00008	7.6%
R95	0.00006	0.000012	1.2%	0.00007	7.2%
R96	0.00006	0.000044	4.4%	0.00010	10.4%
R97	0.00006	0.000020	2.0%	0.00008	8.0%
R98	0.00006	0.000027	2.7%	0.00009	8.7%
R99	0.00006	0.000022	2.2%	0.00008	8.2%
R100	0.00006	0.000013	1.3%	0.00007	7.3%
R101	0.00006	0.000013	1.3%	0.00007	7.3%
R102	0.00006	0.000006	0.6%	0.00007	6.6%
R103	0.00006	0.000016	1.6%	0.00008	7.6%
R104	0.00006	0.000007	0.7%	0.00007	6.7%
R105	0.00006	0.000009	0.9%	0.00007	6.9%
R106	0.00006	0.000011	1.1%	0.00007	7.1%
R107	0.00006	0.000042	4.2%	0.00010	10.2%
R108	0.00006	0.000012	1.2%	0.00007	7.2%
R109	0.00006	0.000017	1.7%	0.00008	7.7%
R110	0.00006	0.000017	1.7%	0.00008	7.7%
R111	0.00006	0.000016	1.6%	0.00008	7.6%
R112	0.00006	0.000011	1.1%	0.00007	7.1%
R113	0.00006	0.000016	1.6%	0.00008	7.6%
R114	0.00006	0.000016	1.6%	0.00008	7.6%
R115	0.00006	0.000011	1.1%	0.00007	7.1%
R116	0.00006	0.000010	1.0%	0.00007	7.0%
R117	0.00006	0.000011	1.1%	0.00007	7.1%
R118	0.00006	0.000011	1.1%	0.00007	7.1%
R119	0.00006	0.000018	1.8%	0.00008	7.8%
R120	0.00006	0.000011	1.1%	0.00007	7.1%
R121	0.00006	0.000022	2.2%	0.00008	8.2%
R122	0.00006	0.000022	2.2%	0.00008	8.2%
R123	0.00006	0.000022	2.2%	0.00008	8.2%
R124	0.00006	0.000022	2.2%	0.00008	8.2%
R125	0.00006	0.000025	2.5%	0.00008	8.5%
R126	0.00006	0.000025	2.5%	0.00009	8.5%
R127	0.00006	0.000025	2.5%	0.00009	8.5%
R128	0.00006	0.000025	2.5%	0.00009	8.5%
R129	0.00006	0.000026	2.6%	0.00009	8.6%
R130	0.00006	0.000026	2.6%	0.00009	8.6%
R131	0.00006	0.000026	2.6%	0.00009	8.6%
R132	0.00006	0.000026	2.6%	0.00009	8.6%
R133	0.00006	0.000026	2.6%	0.00009	8.6%
R134	0.00006	0.000026	2.6%	0.00009	8.6%
R135	0.00006	0.000026	2.6%	0.00009	8.6%
R136	0.00006	0.000026	2.6%	0.00009	8.6%
R137	0.00006	0.000026	2.6%	0.00009	8.6%
R138	0.00006	0.000026	2.6%	0.00009	8.6%
R139	0.00006	0.000026	2.6%	0.00009	8.6%
R140	0.00006	0.000026	2.6%	0.00009	8.6%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	0.00006	0.000026	2.6%	0.00009	8.6%
R142	0.00006	0.000026	2.6%	0.00009	8.6%
R143	0.00006	0.000026	2.6%	0.00009	8.6%
R144	0.00006	0.000026	2.6%	0.00009	8.6%
R145	0.00006	0.000022	2.2%	0.00008	8.2%
R146	0.00006	0.000022	2.2%	0.00008	8.2%
R147	0.00006	0.000022	2.2%	0.00008	8.2%
R148	0.00006	0.000022	2.2%	0.00008	8.2%
R149	0.00006	0.000022	2.2%	0.00008	8.2%
R150	0.00006	0.000022	2.2%	0.00008	8.2%
R151	0.00006	0.000022	2.2%	0.00008	8.2%
R152	0.00006	0.000023	2.3%	0.00008	8.3%
R153	0.00006	0.000023	2.3%	0.00008	8.3%
R154	0.00006	0.000022	2.2%	0.00008	8.2%
R155	0.00006	0.000022	2.2%	0.00008	8.2%
R156	0.00006	0.000022	2.2%	0.00008	8.2%
R157	0.00006	0.000022	2.2%	0.00008	8.2%
R158	0.00006	0.000022	2.2%	0.00008	8.2%
R159	0.00006	0.000022	2.2%	0.00008	8.2%
R160	0.00006	0.000024	2.4%	0.00008	8.4%
R161	0.00006	0.000024	2.4%	0.00008	8.4%
R162	0.00006	0.000024	2.4%	0.00008	8.4%
R163	0.00006	0.000024	2.4%	0.00008	8.4%
R164	0.00006	0.000024	2.4%	0.00008	8.4%
R165	0.00006	0.000024	2.4%	0.00008	8.4%
R166	0.00006	0.000024	2.4%	0.00008	8.4%
R167	0.00006	0.000024	2.4%	0.00008	8.4%
R168	0.00006	0.000024	2.4%	0.00008	8.4%
R169	0.00006	0.000024	2.4%	0.00008	8.4%
R170	0.00006	0.000024	2.4%	0.00008	8.4%
R171	0.00006	0.000024	2.4%	0.00008	8.4%
R172	0.00006	0.000024	2.4%	0.00008	8.4%
R173	0.00006	0.000024	2.4%	0.00008	8.4%
R174	0.00006	0.000024	2.4%	0.00008	8.4%
R175	0.00006	0.000024	2.4%	0.00008	8.4%
R176	0.00006	0.000024	2.4%	0.00008	8.4%
R177	0.00006	0.000024	2.4%	0.00008	8.4%
R178	0.00006	0.000024	2.4%	0.00008	8.4%
R179	0.00006	0.000024	2.4%	0.00008	8.4%
R180	0.00006	0.000024	2.4%	0.00008	8.4%
R181	0.00006	0.000024	2.4%	0.00008	8.4%
R182	0.00006	0.000024	2.4%	0.00008	8.4%
R183	0.00006	0.000024	2.4%	0.00008	8.4%
R184	0.00006	0.000024	2.4%	0.00008	8.4%
R185	0.00006	0.000024	2.4%	0.00008	8.4%
R186	0.00006	0.000024	2.4%	0.00008	8.4%
R187	0.00006	0.000024	2.4%	0.00008	8.4%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	0.00006	0.000024	2.4%	0.00008	8.4%
R189	0.00006	0.000024	2.4%	0.00008	8.4%
R190	0.00006	0.000024	2.4%	0.00008	8.4%
R191	0.00006	0.000024	2.4%	0.00008	8.4%
R192	0.00006	0.000022	2.2%	0.00008	8.2%
R193	0.00006	0.000022	2.2%	0.00008	8.2%
R194	0.00006	0.000022	2.2%	0.00008	8.2%
R195	0.00006	0.000022	2.2%	0.00008	8.2%
R196	0.00006	0.000022	2.2%	0.00008	8.2%
R197	0.00006	0.000022	2.2%	0.00008	8.2%
R198	0.00006	0.000022	2.2%	0.00008	8.2%
R199	0.00006	0.000022	2.2%	0.00008	8.2%
R200	0.00006	0.000021	2.1%	0.00008	8.1%
R201	0.00006	0.000021	2.1%	0.00008	8.1%
R202	0.00006	0.000021	2.1%	0.00008	8.1%
R203	0.00006	0.000021	2.1%	0.00008	8.1%
R204	0.00006	0.000021	2.1%	0.00008	8.1%
R205	0.00006	0.000021	2.1%	0.00008	8.1%
R206	0.00006	0.000021	2.1%	0.00008	8.1%
R207	0.00006	0.000021	2.1%	0.00008	8.1%
R208	0.00006	0.000021	2.1%	0.00008	8.1%
R209	0.00006	0.000021	2.1%	0.00008	8.1%
R210	0.00006	0.000021	2.1%	0.00008	8.1%
R211	0.00006	0.000021	2.1%	0.00008	8.1%
R212	0.00006	0.000021	2.1%	0.00008	8.1%
R213	0.00006	0.000021	2.1%	0.00008	8.1%
R214	0.00006	0.000012	1.2%	0.00007	7.2%
R215	0.00006	0.000012	1.2%	0.00007	7.2%
R216	0.00006	0.000012	1.2%	0.00007	7.2%
R217	0.00006	0.000012	1.2%	0.00007	7.2%
R218	0.00006	0.000012	1.2%	0.00007	7.2%
R219	0.00006	0.000012	1.2%	0.00007	7.2%
R220	0.00006	0.000011	1.1%	0.00007	7.1%
R221	0.00006	0.000012	1.2%	0.00007	7.2%
R222	0.00006	0.000012	1.2%	0.00007	7.2%
R223	0.00006	0.000012	1.2%	0.00007	7.2%
R224	0.00006	0.000012	1.2%	0.00007	7.2%
R225	0.00006	0.000011	1.1%	0.00007	7.1%
R226	0.00006	0.000011	1.1%	0.00007	7.1%
R227	0.00006	0.000011	1.1%	0.00007	7.1%
R228	0.00006	0.000011	1.1%	0.00007	7.1%
R229	0.00006	0.000011	1.1%	0.00007	7.1%
R230	0.00006	0.000011	1.1%	0.00007	7.1%
R231	0.00006	0.000011	1.1%	0.00007	7.1%
R232	0.00006	0.000011	1.1%	0.00007	7.1%
R233	0.00006	0.000011	1.1%	0.00007	7.1%
R234	0.00006	0.000011	1.1%	0.00007	7.1%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	0.00006	0.000011	1.1%	0.00007	7.1%
R236	0.00006	0.000011	1.1%	0.00007	7.1%
R237	0.00006	0.000011	1.1%	0.00007	7.1%
R238	0.00006	0.000011	1.1%	0.00007	7.1%
R239	0.00006	0.000011	1.1%	0.00007	7.1%
R240	0.00006	0.000011	1.1%	0.00007	7.1%
R241	0.00006	0.000011	1.1%	0.00007	7.1%
R242	0.00006	0.000011	1.1%	0.00007	7.1%
R243	0.00006	0.000011	1.1%	0.00007	7.1%
R244	0.00006	0.000011	1.1%	0.00007	7.1%
R245	0.00006	0.000011	1.1%	0.00007	7.1%
R246	0.00006	0.000011	1.1%	0.00007	7.1%
R247	0.00006	0.000011	1.1%	0.00007	7.1%
R248	0.00006	0.000011	1.1%	0.00007	7.1%
R249	0.00006	0.000011	1.1%	0.00007	7.1%
R250	0.00006	0.000011	1.1%	0.00007	7.1%
R251	0.00006	0.000011	1.1%	0.00007	7.1%
R252	0.00006	0.000011	1.1%	0.00007	7.1%
R253	0.00006	0.000004	0.4%	0.00006	6.4%
R254	0.00006	0.000006	0.6%	0.00007	6.6%
R255	0.00006	0.000006	0.6%	0.00007	6.6%
R256	0.00006	0.000006	0.6%	0.00007	6.6%
R257	0.00006	0.000007	0.7%	0.00007	6.7%
R258	0.00006	0.000007	0.7%	0.00007	6.7%
R259	0.00006	0.000006	0.6%	0.00007	6.6%
R260	0.00006	0.000006	0.6%	0.00007	6.6%
R261	0.00006	0.000007	0.7%	0.00007	6.7%
R262	0.00006	0.000007	0.7%	0.00007	6.7%
R263	0.00006	0.000006	0.6%	0.00007	6.6%
R264	0.00006	0.000006	0.6%	0.00007	6.6%
R265	0.00006	0.000006	0.6%	0.00007	6.6%
R266	0.00006	0.000006	0.6%	0.00007	6.6%
R267	0.00006	0.000006	0.6%	0.00007	6.6%
R268	0.00006	0.000006	0.6%	0.00007	6.6%
R269	0.00006	0.000006	0.6%	0.00007	6.6%
R270	0.00006	0.000006	0.6%	0.00007	6.6%
R271	0.00006	0.000006	0.6%	0.00007	6.6%
R272	0.00006	0.000006	0.6%	0.00007	6.6%
R273	0.00006	0.000006	0.6%	0.00007	6.6%
R274	0.00006	0.000006	0.6%	0.00007	6.6%
R275	0.00006	0.000006	0.6%	0.00007	6.6%
R276	0.00006	0.000006	0.6%	0.00007	6.6%
R277	0.00006	0.000006	0.6%	0.00007	6.6%
R278	0.00006	0.000006	0.6%	0.00007	6.6%
R279	0.00006	0.000006	0.6%	0.00007	6.6%
R280	0.00006	0.000006	0.6%	0.00007	6.6%
R281	0.00006	0.000006	0.6%	0.00007	6.6%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	0.00006	0.000006	0.6%	0.00007	6.6%
R283	0.00006	0.000006	0.6%	0.00007	6.6%
R284	0.00006	0.000006	0.6%	0.00007	6.6%
R285	0.00006	0.000006	0.6%	0.00007	6.6%
R286	0.00006	0.000006	0.6%	0.00007	6.6%
R287	0.00006	0.000006	0.6%	0.00007	6.6%
R288	0.00006	0.000006	0.6%	0.00007	6.6%
R289	0.00006	0.000006	0.6%	0.00007	6.6%
R290	0.00006	0.000006	0.6%	0.00007	6.6%
R291	0.00006	0.000006	0.6%	0.00007	6.6%
R292	0.00006	0.000006	0.6%	0.00007	6.6%
R293	0.00006	0.000006	0.6%	0.00007	6.6%
R294	0.00006	0.000006	0.6%	0.00007	6.6%
R295	0.00006	0.000014	1.4%	0.00007	7.4%
R296	0.00006	0.000017	1.7%	0.00008	7.7%
R297	0.00006	0.000019	1.9%	0.00008	7.9%
R298	0.00006	0.000020	2.0%	0.00008	8.0%
R299	0.00006	0.000032	3.2%	0.00009	9.2%
R300	0.00006	0.000033	3.3%	0.00009	9.3%
R301	0.00006	0.000011	1.1%	0.00007	7.1%
R302	0.00006	0.000012	1.2%	0.00007	7.2%
R303	0.00006	0.000012	1.2%	0.00007	7.2%
R304	0.00006	0.000011	1.1%	0.00007	7.1%
R305	0.00006	0.000017	1.7%	0.00008	7.7%
R306	0.00006	0.000026	2.6%	0.00009	8.6%
R307	0.00006	0.000006	0.6%	0.00007	6.6%
R308	0.00006	0.000014	1.4%	0.00007	7.4%
R309	0.00006	0.000019	1.9%	0.00008	7.9%
R310	0.00006	0.000009	0.9%	0.00007	6.9%
R311	0.00006	0.000033	3.3%	0.00009	9.3%
R312	0.00006	0.000033	3.3%	0.00009	9.3%
R313	0.00006	0.000033	3.3%	0.00009	9.3%
R314	0.00006	0.000033	3.3%	0.00009	9.3%
R315	0.00006	0.000033	3.3%	0.00009	9.3%
R316	0.00006	0.000014	1.4%	0.00007	7.4%
R317	0.00006	0.000011	1.1%	0.00007	7.1%
R318	0.00006	0.000013	1.3%	0.00007	7.3%
R319	0.00006	0.000011	1.1%	0.00007	7.1%
R320	0.00006	0.000009	0.9%	0.00007	6.9%
R321	0.00006	0.000007	0.7%	0.00007	6.7%
R322	0.00006	0.000008	0.8%	0.00007	6.8%
R323	0.00006	0.000008	0.8%	0.00007	6.8%
R324	0.00006	0.000006	0.6%	0.00007	6.6%
R325	0.00006	0.000008	0.8%	0.00007	6.8%
R326	0.00006	0.000007	0.7%	0.00007	6.7%
R327	0.00006	0.000007	0.7%	0.00007	6.7%
R328	0.00006	0.000006	0.6%	0.00007	6.6%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
R329	0.00006	0.000006	0.6%	0.00007	6.6%
R330	0.00006	0.000005	0.5%	0.00006	6.5%
R331	0.00006	0.000008	0.8%	0.00007	6.8%
R332	0.00006	0.000008	0.8%	0.00007	6.8%
R333	0.00006	0.000006	0.6%	0.00007	6.6%
R334	0.00006	0.000006	0.6%	0.00007	6.6%
R335	0.00006	0.000006	0.6%	0.00007	6.6%
R336	0.00006	0.000009	0.9%	0.00007	6.9%
R337	0.00006	0.000008	0.8%	0.00007	6.8%
R338	0.00006	0.000008	0.8%	0.00007	6.8%

**Table 8B.h19 Modelled Annual Mean PCBs Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	8.70E-12	4.28E-12	0.0%	1.30E-11	0.0%
R2	8.70E-12	2.22E-12	0.0%	1.09E-11	0.0%
R3	8.70E-12	4.76E-12	0.0%	1.35E-11	0.0%
R4	8.70E-12	9.28E-12	0.0%	1.80E-11	0.0%
R5	8.70E-12	2.81E-11	0.0%	3.68E-11	0.0%
R6	8.70E-12	1.19E-11	0.0%	2.06E-11	0.0%
R7	8.70E-12	1.35E-11	0.0%	2.22E-11	0.0%
R8	8.70E-12	4.22E-12	0.0%	1.29E-11	0.0%
R9	8.70E-12	8.18E-12	0.0%	1.69E-11	0.0%
R10	8.70E-12	6.09E-12	0.0%	1.48E-11	0.0%
R11	8.70E-12	1.12E-11	0.0%	1.99E-11	0.0%
R12	8.70E-12	4.76E-12	0.0%	1.35E-11	0.0%
R13	8.70E-12	4.29E-12	0.0%	1.30E-11	0.0%
R14	8.70E-12	4.00E-12	0.0%	1.27E-11	0.0%
R15	8.70E-12	4.90E-12	0.0%	1.36E-11	0.0%
R16	8.70E-12	1.53E-11	0.0%	2.40E-11	0.0%
R17	8.70E-12	2.00E-11	0.0%	2.87E-11	0.0%
R18	8.70E-12	2.01E-11	0.0%	2.88E-11	0.0%
R19	8.70E-12	2.22E-11	0.0%	3.09E-11	0.0%
R20	8.70E-12	2.60E-11	0.0%	3.47E-11	0.0%
R21	8.70E-12	2.44E-11	0.0%	3.31E-11	0.0%
R22	8.70E-12	2.19E-11	0.0%	3.06E-11	0.0%
R23	8.70E-12	2.01E-11	0.0%	2.88E-11	0.0%
R24	8.70E-12	1.93E-11	0.0%	2.80E-11	0.0%
R26	8.70E-12	1.93E-11	0.0%	2.80E-11	0.0%
R27	8.70E-12	2.07E-11	0.0%	2.94E-11	0.0%
R28	8.70E-12	1.53E-11	0.0%	2.40E-11	0.0%
R29	8.70E-12	2.59E-11	0.0%	3.46E-11	0.0%
R30	8.70E-12	1.08E-11	0.0%	1.95E-11	0.0%
R31	8.70E-12	1.05E-11	0.0%	1.92E-11	0.0%
R32	8.70E-12	1.01E-11	0.0%	1.88E-11	0.0%
R33	8.70E-12	1.12E-11	0.0%	1.99E-11	0.0%
R34	8.70E-12	1.21E-11	0.0%	2.08E-11	0.0%
R35	8.70E-12	1.20E-11	0.0%	2.07E-11	0.0%
R36	8.70E-12	1.28E-11	0.0%	2.15E-11	0.0%
R37	8.70E-12	1.36E-11	0.0%	2.23E-11	0.0%
R38	8.70E-12	1.52E-11	0.0%	2.39E-11	0.0%
R39	8.70E-12	1.69E-11	0.0%	2.56E-11	0.0%
R40	8.70E-12	2.02E-11	0.0%	2.89E-11	0.0%
R41	8.70E-12	1.79E-11	0.0%	2.66E-11	0.0%
R42	8.70E-12	1.94E-11	0.0%	2.81E-11	0.0%
R43	8.70E-12	2.00E-11	0.0%	2.87E-11	0.0%
R44	8.70E-12	2.05E-11	0.0%	2.92E-11	0.0%
R45	8.70E-12	1.86E-11	0.0%	2.73E-11	0.0%
R46	8.70E-12	2.18E-11	0.0%	3.05E-11	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	8.70E-12	1.96E-11	0.0%	2.83E-11	0.0%
R48	8.70E-12	1.83E-11	0.0%	2.70E-11	0.0%
R49	8.70E-12	1.63E-11	0.0%	2.50E-11	0.0%
R50	8.70E-12	1.36E-11	0.0%	2.23E-11	0.0%
R51	8.70E-12	1.18E-11	0.0%	2.05E-11	0.0%
R52	8.70E-12	1.10E-11	0.0%	1.97E-11	0.0%
R53	8.70E-12	1.01E-11	0.0%	1.88E-11	0.0%
R54	8.70E-12	9.76E-12	0.0%	1.85E-11	0.0%
R55	8.70E-12	1.49E-11	0.0%	2.36E-11	0.0%
R56	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R57	8.70E-12	2.74E-11	0.0%	3.61E-11	0.0%
R58	8.70E-12	2.83E-11	0.0%	3.70E-11	0.0%
R59	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R60	8.70E-12	6.74E-12	0.0%	1.54E-11	0.0%
R61	8.70E-12	2.16E-11	0.0%	3.03E-11	0.0%
R62	8.70E-12	2.23E-11	0.0%	3.10E-11	0.0%
R63	8.70E-12	1.61E-11	0.0%	2.48E-11	0.0%
R64	8.70E-12	1.73E-11	0.0%	2.60E-11	0.0%
R65	8.70E-12	1.77E-11	0.0%	2.64E-11	0.0%
R66	8.70E-12	1.18E-11	0.0%	2.05E-11	0.0%
R67	8.70E-12	6.83E-12	0.0%	1.55E-11	0.0%
R68	8.70E-12	6.55E-12	0.0%	1.53E-11	0.0%
R69	8.70E-12	8.26E-12	0.0%	1.70E-11	0.0%
R70	8.70E-12	1.66E-12	0.0%	1.04E-11	0.0%
R71	8.70E-12	2.59E-12	0.0%	1.13E-11	0.0%
R72	8.70E-12	1.29E-11	0.0%	2.16E-11	0.0%
R73	8.70E-12	9.67E-12	0.0%	1.84E-11	0.0%
R74	8.70E-12	1.23E-11	0.0%	2.10E-11	0.0%
R75	8.70E-12	4.50E-12	0.0%	1.32E-11	0.0%
R76	8.70E-12	8.21E-12	0.0%	1.69E-11	0.0%
R77	8.70E-12	7.30E-12	0.0%	1.60E-11	0.0%
R78	8.70E-12	9.67E-12	0.0%	1.84E-11	0.0%
R79	8.70E-12	3.46E-11	0.0%	4.33E-11	0.0%
R80	8.70E-12	1.66E-11	0.0%	2.53E-11	0.0%
R81	8.70E-12	1.57E-11	0.0%	2.44E-11	0.0%
R82	8.70E-12	2.08E-11	0.0%	2.95E-11	0.0%
R83	8.70E-12	1.14E-12	0.0%	9.84E-12	0.0%
R84	8.70E-12	3.57E-11	0.0%	4.44E-11	0.0%
R85	8.70E-12	3.51E-11	0.0%	4.38E-11	0.0%
R86	8.70E-12	3.45E-11	0.0%	4.32E-11	0.0%
R87	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R88	8.70E-12	2.40E-11	0.0%	3.27E-11	0.0%
R89	8.70E-12	9.39E-12	0.0%	1.81E-11	0.0%
R90	8.70E-12	1.84E-11	0.0%	2.71E-11	0.0%
R91	8.70E-12	1.79E-11	0.0%	2.66E-11	0.0%
R92	8.70E-12	1.06E-11	0.0%	1.93E-11	0.0%
R93	8.70E-12	9.36E-12	0.0%	1.81E-11	0.0%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	8.70E-12	1.32E-11	0.0%	2.19E-11	0.0%
R95	8.70E-12	9.45E-12	0.0%	1.82E-11	0.0%
R96	8.70E-12	3.59E-11	0.0%	4.46E-11	0.0%
R97	8.70E-12	1.67E-11	0.0%	2.54E-11	0.0%
R98	8.70E-12	2.18E-11	0.0%	3.05E-11	0.0%
R99	8.70E-12	1.79E-11	0.0%	2.66E-11	0.0%
R100	8.70E-12	1.07E-11	0.0%	1.94E-11	0.0%
R101	8.70E-12	1.10E-11	0.0%	1.97E-11	0.0%
R102	8.70E-12	4.54E-12	0.0%	1.32E-11	0.0%
R103	8.70E-12	1.29E-11	0.0%	2.16E-11	0.0%
R104	8.70E-12	5.60E-12	0.0%	1.43E-11	0.0%
R105	8.70E-12	7.12E-12	0.0%	1.58E-11	0.0%
R106	8.70E-12	9.38E-12	0.0%	1.81E-11	0.0%
R107	8.70E-12	3.44E-11	0.0%	4.31E-11	0.0%
R108	8.70E-12	9.88E-12	0.0%	1.86E-11	0.0%
R109	8.70E-12	1.41E-11	0.0%	2.28E-11	0.0%
R110	8.70E-12	1.37E-11	0.0%	2.24E-11	0.0%
R111	8.70E-12	1.34E-11	0.0%	2.21E-11	0.0%
R112	8.70E-12	8.61E-12	0.0%	1.73E-11	0.0%
R113	8.70E-12	1.32E-11	0.0%	2.19E-11	0.0%
R114	8.70E-12	1.34E-11	0.0%	2.21E-11	0.0%
R115	8.70E-12	8.88E-12	0.0%	1.76E-11	0.0%
R116	8.70E-12	8.25E-12	0.0%	1.69E-11	0.0%
R117	8.70E-12	8.74E-12	0.0%	1.74E-11	0.0%
R118	8.70E-12	8.84E-12	0.0%	1.75E-11	0.0%
R119	8.70E-12	1.45E-11	0.0%	2.32E-11	0.0%
R120	8.70E-12	8.93E-12	0.0%	1.76E-11	0.0%
R121	8.70E-12	1.82E-11	0.0%	2.69E-11	0.0%
R122	8.70E-12	1.83E-11	0.0%	2.70E-11	0.0%
R123	8.70E-12	1.83E-11	0.0%	2.70E-11	0.0%
R124	8.70E-12	1.81E-11	0.0%	2.68E-11	0.0%
R125	8.70E-12	2.04E-11	0.0%	2.91E-11	0.0%
R126	8.70E-12	2.05E-11	0.0%	2.92E-11	0.0%
R127	8.70E-12	2.05E-11	0.0%	2.92E-11	0.0%
R128	8.70E-12	2.05E-11	0.0%	2.92E-11	0.0%
R129	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R130	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R131	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R132	8.70E-12	2.09E-11	0.0%	2.96E-11	0.0%
R133	8.70E-12	2.09E-11	0.0%	2.96E-11	0.0%
R134	8.70E-12	2.09E-11	0.0%	2.96E-11	0.0%
R135	8.70E-12	2.09E-11	0.0%	2.96E-11	0.0%
R136	8.70E-12	2.11E-11	0.0%	2.98E-11	0.0%
R137	8.70E-12	2.11E-11	0.0%	2.98E-11	0.0%
R138	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R139	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R140	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R142	8.70E-12	2.10E-11	0.0%	2.97E-11	0.0%
R143	8.70E-12	2.09E-11	0.0%	2.96E-11	0.0%
R144	8.70E-12	2.09E-11	0.0%	2.96E-11	0.0%
R145	8.70E-12	1.80E-11	0.0%	2.67E-11	0.0%
R146	8.70E-12	1.80E-11	0.0%	2.67E-11	0.0%
R147	8.70E-12	1.81E-11	0.0%	2.68E-11	0.0%
R148	8.70E-12	1.82E-11	0.0%	2.69E-11	0.0%
R149	8.70E-12	1.83E-11	0.0%	2.70E-11	0.0%
R150	8.70E-12	1.83E-11	0.0%	2.70E-11	0.0%
R151	8.70E-12	1.84E-11	0.0%	2.71E-11	0.0%
R152	8.70E-12	1.85E-11	0.0%	2.72E-11	0.0%
R153	8.70E-12	1.84E-11	0.0%	2.71E-11	0.0%
R154	8.70E-12	1.83E-11	0.0%	2.70E-11	0.0%
R155	8.70E-12	1.82E-11	0.0%	2.69E-11	0.0%
R156	8.70E-12	1.82E-11	0.0%	2.69E-11	0.0%
R157	8.70E-12	1.82E-11	0.0%	2.69E-11	0.0%
R158	8.70E-12	1.82E-11	0.0%	2.69E-11	0.0%
R159	8.70E-12	1.82E-11	0.0%	2.69E-11	0.0%
R160	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R161	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R162	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R163	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R164	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R165	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R166	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R167	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R168	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R169	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R170	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R171	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R172	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R173	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R174	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R175	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R176	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R177	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R178	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R179	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R180	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R181	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R182	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R183	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R184	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R185	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R186	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R187	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R189	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R190	8.70E-12	1.99E-11	0.0%	2.86E-11	0.0%
R191	8.70E-12	1.98E-11	0.0%	2.85E-11	0.0%
R192	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R193	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R194	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R195	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R196	8.70E-12	1.77E-11	0.0%	2.64E-11	0.0%
R197	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R198	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R199	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R200	8.70E-12	1.75E-11	0.0%	2.62E-11	0.0%
R201	8.70E-12	1.75E-11	0.0%	2.62E-11	0.0%
R202	8.70E-12	1.75E-11	0.0%	2.62E-11	0.0%
R203	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R204	8.70E-12	1.76E-11	0.0%	2.63E-11	0.0%
R205	8.70E-12	1.75E-11	0.0%	2.62E-11	0.0%
R206	8.70E-12	1.75E-11	0.0%	2.62E-11	0.0%
R207	8.70E-12	1.74E-11	0.0%	2.61E-11	0.0%
R208	8.70E-12	1.74E-11	0.0%	2.61E-11	0.0%
R209	8.70E-12	1.75E-11	0.0%	2.62E-11	0.0%
R210	8.70E-12	1.74E-11	0.0%	2.61E-11	0.0%
R211	8.70E-12	1.75E-11	0.0%	2.62E-11	0.0%
R212	8.70E-12	1.75E-11	0.0%	2.62E-11	0.0%
R213	8.70E-12	1.74E-11	0.0%	2.61E-11	0.0%
R214	8.70E-12	9.70E-12	0.0%	1.84E-11	0.0%
R215	8.70E-12	9.66E-12	0.0%	1.84E-11	0.0%
R216	8.70E-12	9.60E-12	0.0%	1.83E-11	0.0%
R217	8.70E-12	9.54E-12	0.0%	1.82E-11	0.0%
R218	8.70E-12	9.48E-12	0.0%	1.82E-11	0.0%
R219	8.70E-12	9.42E-12	0.0%	1.81E-11	0.0%
R220	8.70E-12	9.37E-12	0.0%	1.81E-11	0.0%
R221	8.70E-12	9.45E-12	0.0%	1.82E-11	0.0%
R222	8.70E-12	9.45E-12	0.0%	1.82E-11	0.0%
R223	8.70E-12	9.43E-12	0.0%	1.81E-11	0.0%
R224	8.70E-12	9.48E-12	0.0%	1.82E-11	0.0%
R225	8.70E-12	9.32E-12	0.0%	1.80E-11	0.0%
R226	8.70E-12	9.28E-12	0.0%	1.80E-11	0.0%
R227	8.70E-12	9.24E-12	0.0%	1.79E-11	0.0%
R228	8.70E-12	9.19E-12	0.0%	1.79E-11	0.0%
R229	8.70E-12	9.03E-12	0.0%	1.77E-11	0.0%
R230	8.70E-12	8.98E-12	0.0%	1.77E-11	0.0%
R231	8.70E-12	8.92E-12	0.0%	1.76E-11	0.0%
R232	8.70E-12	8.97E-12	0.0%	1.77E-11	0.0%
R233	8.70E-12	8.98E-12	0.0%	1.77E-11	0.0%
R234	8.70E-12	9.01E-12	0.0%	1.77E-11	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	8.70E-12	9.03E-12	0.0%	1.77E-11	0.0%
R236	8.70E-12	9.04E-12	0.0%	1.77E-11	0.0%
R237	8.70E-12	9.05E-12	0.0%	1.78E-11	0.0%
R238	8.70E-12	9.07E-12	0.0%	1.78E-11	0.0%
R239	8.70E-12	9.08E-12	0.0%	1.78E-11	0.0%
R240	8.70E-12	9.16E-12	0.0%	1.79E-11	0.0%
R241	8.70E-12	9.12E-12	0.0%	1.78E-11	0.0%
R242	8.70E-12	9.15E-12	0.0%	1.79E-11	0.0%
R243	8.70E-12	9.17E-12	0.0%	1.79E-11	0.0%
R244	8.70E-12	9.19E-12	0.0%	1.79E-11	0.0%
R245	8.70E-12	9.19E-12	0.0%	1.79E-11	0.0%
R246	8.70E-12	9.21E-12	0.0%	1.79E-11	0.0%
R247	8.70E-12	9.20E-12	0.0%	1.79E-11	0.0%
R248	8.70E-12	9.24E-12	0.0%	1.79E-11	0.0%
R249	8.70E-12	9.23E-12	0.0%	1.79E-11	0.0%
R250	8.70E-12	9.24E-12	0.0%	1.79E-11	0.0%
R251	8.70E-12	9.16E-12	0.0%	1.79E-11	0.0%
R252	8.70E-12	9.34E-12	0.0%	1.80E-11	0.0%
R253	8.70E-12	2.95E-12	0.0%	1.17E-11	0.0%
R254	8.70E-12	5.19E-12	0.0%	1.39E-11	0.0%
R255	8.70E-12	5.27E-12	0.0%	1.40E-11	0.0%
R256	8.70E-12	5.27E-12	0.0%	1.40E-11	0.0%
R257	8.70E-12	5.34E-12	0.0%	1.40E-11	0.0%
R258	8.70E-12	5.34E-12	0.0%	1.40E-11	0.0%
R259	8.70E-12	5.27E-12	0.0%	1.40E-11	0.0%
R260	8.70E-12	5.27E-12	0.0%	1.40E-11	0.0%
R261	8.70E-12	5.34E-12	0.0%	1.40E-11	0.0%
R262	8.70E-12	5.34E-12	0.0%	1.40E-11	0.0%
R263	8.70E-12	5.01E-12	0.0%	1.37E-11	0.0%
R264	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R265	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R266	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R267	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R268	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R269	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R270	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R271	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R272	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R273	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R274	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R275	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R276	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R277	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R278	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R279	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R280	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R281	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	8.70E-12	4.97E-12	0.0%	1.37E-11	0.0%
R283	8.70E-12	4.94E-12	0.0%	1.36E-11	0.0%
R284	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R285	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R286	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R287	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R288	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R289	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R290	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R291	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R292	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R293	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R294	8.70E-12	5.22E-12	0.0%	1.39E-11	0.0%
R295	8.70E-12	1.16E-11	0.0%	2.03E-11	0.0%
R296	8.70E-12	1.36E-11	0.0%	2.23E-11	0.0%
R297	8.70E-12	1.54E-11	0.0%	2.41E-11	0.0%
R298	8.70E-12	1.60E-11	0.0%	2.47E-11	0.0%
R299	8.70E-12	2.66E-11	0.0%	3.53E-11	0.0%
R300	8.70E-12	2.68E-11	0.0%	3.55E-11	0.0%
R301	8.70E-12	9.09E-12	0.0%	1.78E-11	0.0%
R302	8.70E-12	9.69E-12	0.0%	1.84E-11	0.0%
R303	8.70E-12	9.85E-12	0.0%	1.86E-11	0.0%
R304	8.70E-12	9.16E-12	0.0%	1.79E-11	0.0%
R305	8.70E-12	1.40E-11	0.0%	2.27E-11	0.0%
R306	8.70E-12	2.13E-11	0.0%	3.00E-11	0.0%
R307	8.70E-12	4.67E-12	0.0%	1.34E-11	0.0%
R308	8.70E-12	1.18E-11	0.0%	2.05E-11	0.0%
R309	8.70E-12	1.53E-11	0.0%	2.40E-11	0.0%
R310	8.70E-12	7.13E-12	0.0%	1.58E-11	0.0%
R311	8.70E-12	2.68E-11	0.0%	3.55E-11	0.0%
R312	8.70E-12	2.67E-11	0.0%	3.54E-11	0.0%
R313	8.70E-12	2.67E-11	0.0%	3.54E-11	0.0%
R314	8.70E-12	2.66E-11	0.0%	3.53E-11	0.0%
R315	8.70E-12	2.66E-11	0.0%	3.53E-11	0.0%
R316	8.70E-12	1.11E-11	0.0%	1.98E-11	0.0%
R317	8.70E-12	9.26E-12	0.0%	1.80E-11	0.0%
R318	8.70E-12	1.10E-11	0.0%	1.97E-11	0.0%
R319	8.70E-12	8.87E-12	0.0%	1.76E-11	0.0%
R320	8.70E-12	7.69E-12	0.0%	1.64E-11	0.0%
R321	8.70E-12	5.65E-12	0.0%	1.43E-11	0.0%
R322	8.70E-12	6.83E-12	0.0%	1.55E-11	0.0%
R323	8.70E-12	6.15E-12	0.0%	1.48E-11	0.0%
R324	8.70E-12	4.85E-12	0.0%	1.35E-11	0.0%
R325	8.70E-12	6.30E-12	0.0%	1.50E-11	0.0%
R326	8.70E-12	5.91E-12	0.0%	1.46E-11	0.0%
R327	8.70E-12	5.49E-12	0.0%	1.42E-11	0.0%
R328	8.70E-12	5.17E-12	0.0%	1.39E-11	0.0%

<b>ID</b>	<b>Background</b>	<b>PC (Stack)</b>	<b>% PC (stack) of AQAL</b>	<b>PEC</b>	<b>%PEC of AQAL</b>
R329	8.70E-12	4.70E-12	0.0%	1.34E-11	0.0%
R330	8.70E-12	4.05E-12	0.0%	1.28E-11	0.0%
R331	8.70E-12	6.74E-12	0.0%	1.54E-11	0.0%
R332	8.70E-12	6.53E-12	0.0%	1.52E-11	0.0%
R333	8.70E-12	5.13E-12	0.0%	1.38E-11	0.0%
R334	8.70E-12	4.92E-12	0.0%	1.36E-11	0.0%
R335	8.70E-12	4.89E-12	0.0%	1.36E-11	0.0%
R336	8.70E-12	7.29E-12	0.0%	1.60E-11	0.0%
R337	8.70E-12	6.32E-12	0.0%	1.50E-11	0.0%
R338	8.70E-12	6.53E-12	0.0%	1.52E-11	0.0%

**Table 8B.H20 Modelled Hourly Mean PCBs Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R1	8.70E-12	5.88E-10	0.0%	6.06E-10	0.0%
R2	8.70E-12	8.27E-10	0.0%	8.45E-10	0.0%
R3	8.70E-12	7.92E-10	0.0%	8.10E-10	0.0%
R4	8.70E-12	5.72E-10	0.0%	5.89E-10	0.0%
R5	8.70E-12	9.04E-10	0.0%	9.21E-10	0.0%
R6	8.70E-12	9.54E-10	0.0%	9.71E-10	0.0%
R7	8.70E-12	7.77E-10	0.0%	7.94E-10	0.0%
R8	8.70E-12	5.90E-10	0.0%	6.08E-10	0.0%
R9	8.70E-12	4.98E-10	0.0%	5.16E-10	0.0%
R10	8.70E-12	4.07E-10	0.0%	4.24E-10	0.0%
R11	8.70E-12	4.77E-10	0.0%	4.94E-10	0.0%
R12	8.70E-12	3.31E-10	0.0%	3.49E-10	0.0%
R13	8.70E-12	3.55E-10	0.0%	3.72E-10	0.0%
R14	8.70E-12	4.33E-10	0.0%	4.51E-10	0.0%
R15	8.70E-12	4.85E-10	0.0%	5.03E-10	0.0%
R16	8.70E-12	5.54E-10	0.0%	5.72E-10	0.0%
R17	8.70E-12	6.53E-10	0.0%	6.70E-10	0.0%
R18	8.70E-12	5.83E-10	0.0%	6.01E-10	0.0%
R19	8.70E-12	5.75E-10	0.0%	5.92E-10	0.0%
R20	8.70E-12	6.35E-10	0.0%	6.52E-10	0.0%
R21	8.70E-12	6.02E-10	0.0%	6.19E-10	0.0%
R22	8.70E-12	5.13E-10	0.0%	5.30E-10	0.0%
R23	8.70E-12	5.04E-10	0.0%	5.21E-10	0.0%
R24	8.70E-12	4.75E-10	0.0%	4.92E-10	0.0%
R26	8.70E-12	4.66E-10	0.0%	4.83E-10	0.0%
R27	8.70E-12	5.48E-10	0.0%	5.66E-10	0.0%
R28	8.70E-12	3.65E-10	0.0%	3.83E-10	0.0%
R29	8.70E-12	5.24E-10	0.0%	5.42E-10	0.0%
R30	8.70E-12	4.28E-10	0.0%	4.46E-10	0.0%
R31	8.70E-12	4.33E-10	0.0%	4.50E-10	0.0%
R32	8.70E-12	4.32E-10	0.0%	4.49E-10	0.0%
R33	8.70E-12	4.11E-10	0.0%	4.29E-10	0.0%
R34	8.70E-12	3.79E-10	0.0%	3.96E-10	0.0%
R35	8.70E-12	4.08E-10	0.0%	4.25E-10	0.0%
R36	8.70E-12	4.10E-10	0.0%	4.28E-10	0.0%
R37	8.70E-12	3.77E-10	0.0%	3.94E-10	0.0%
R38	8.70E-12	4.34E-10	0.0%	4.51E-10	0.0%
R39	8.70E-12	4.60E-10	0.0%	4.78E-10	0.0%
R40	8.70E-12	4.48E-10	0.0%	4.65E-10	0.0%
R41	8.70E-12	4.34E-10	0.0%	4.51E-10	0.0%
R42	8.70E-12	4.30E-10	0.0%	4.47E-10	0.0%
R43	8.70E-12	4.25E-10	0.0%	4.42E-10	0.0%
R44	8.70E-12	3.91E-10	0.0%	4.09E-10	0.0%
R45	8.70E-12	3.30E-10	0.0%	3.47E-10	0.0%
R46	8.70E-12	3.73E-10	0.0%	3.90E-10	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R47	8.70E-12	3.46E-10	0.0%	3.63E-10	0.0%
R48	8.70E-12	3.23E-10	0.0%	3.41E-10	0.0%
R49	8.70E-12	3.23E-10	0.0%	3.40E-10	0.0%
R50	8.70E-12	2.84E-10	0.0%	3.01E-10	0.0%
R51	8.70E-12	2.67E-10	0.0%	2.84E-10	0.0%
R52	8.70E-12	2.65E-10	0.0%	2.82E-10	0.0%
R53	8.70E-12	2.86E-10	0.0%	3.03E-10	0.0%
R54	8.70E-12	3.24E-10	0.0%	3.42E-10	0.0%
R55	8.70E-12	3.13E-10	0.0%	3.30E-10	0.0%
R56	8.70E-12	3.68E-10	0.0%	3.86E-10	0.0%
R57	8.70E-12	4.65E-10	0.0%	4.82E-10	0.0%
R58	8.70E-12	4.83E-10	0.0%	5.00E-10	0.0%
R59	8.70E-12	4.94E-10	0.0%	5.12E-10	0.0%
R60	8.70E-12	3.55E-10	0.0%	3.73E-10	0.0%
R61	8.70E-12	4.35E-10	0.0%	4.53E-10	0.0%
R62	8.70E-12	3.94E-10	0.0%	4.12E-10	0.0%
R63	8.70E-12	3.79E-10	0.0%	3.96E-10	0.0%
R64	8.70E-12	3.56E-10	0.0%	3.73E-10	0.0%
R65	8.70E-12	3.32E-10	0.0%	3.49E-10	0.0%
R66	8.70E-12	3.12E-10	0.0%	3.30E-10	0.0%
R67	8.70E-12	3.31E-10	0.0%	3.48E-10	0.0%
R68	8.70E-12	3.86E-10	0.0%	4.04E-10	0.0%
R69	8.70E-12	5.39E-10	0.0%	5.57E-10	0.0%
R70	8.70E-12	2.66E-10	0.0%	2.83E-10	0.0%
R71	8.70E-12	3.07E-10	0.0%	3.24E-10	0.0%
R72	8.70E-12	3.32E-10	0.0%	3.49E-10	0.0%
R73	8.70E-12	3.38E-10	0.0%	3.55E-10	0.0%
R74	8.70E-12	2.79E-10	0.0%	2.96E-10	0.0%
R75	8.70E-12	2.57E-10	0.0%	2.74E-10	0.0%
R76	8.70E-12	3.71E-10	0.0%	3.88E-10	0.0%
R77	8.70E-12	4.24E-10	0.0%	4.42E-10	0.0%
R78	8.70E-12	8.13E-10	0.0%	8.30E-10	0.0%
R79	8.70E-12	6.99E-10	0.0%	7.16E-10	0.0%
R80	8.70E-12	3.13E-10	0.0%	3.31E-10	0.0%
R81	8.70E-12	3.27E-10	0.0%	3.44E-10	0.0%
R82	8.70E-12	4.28E-10	0.0%	4.46E-10	0.0%
R83	8.70E-12	7.66E-10	0.0%	7.83E-10	0.0%
R84	8.70E-12	7.32E-10	0.0%	7.50E-10	0.0%
R85	8.70E-12	6.93E-10	0.0%	7.11E-10	0.0%
R86	8.70E-12	8.36E-10	0.0%	8.54E-10	0.0%
R87	8.70E-12	3.18E-10	0.0%	3.35E-10	0.0%
R88	8.70E-12	5.18E-10	0.0%	5.35E-10	0.0%
R89	8.70E-12	2.72E-10	0.0%	2.90E-10	0.0%
R90	8.70E-12	3.24E-10	0.0%	3.41E-10	0.0%
R91	8.70E-12	3.17E-10	0.0%	3.35E-10	0.0%
R92	8.70E-12	2.82E-10	0.0%	3.00E-10	0.0%
R93	8.70E-12	2.46E-10	0.0%	2.64E-10	0.0%



ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R94	8.70E-12	5.06E-10	0.0%	5.24E-10	0.0%
R95	8.70E-12	3.17E-10	0.0%	3.34E-10	0.0%
R96	8.70E-12	7.20E-10	0.0%	7.37E-10	0.0%
R97	8.70E-12	3.17E-10	0.0%	3.34E-10	0.0%
R98	8.70E-12	3.73E-10	0.0%	3.90E-10	0.0%
R99	8.70E-12	3.18E-10	0.0%	3.36E-10	0.0%
R100	8.70E-12	2.66E-10	0.0%	2.83E-10	0.0%
R101	8.70E-12	2.74E-10	0.0%	2.91E-10	0.0%
R102	8.70E-12	2.58E-10	0.0%	2.76E-10	0.0%
R103	8.70E-12	3.32E-10	0.0%	3.49E-10	0.0%
R104	8.70E-12	2.50E-10	0.0%	2.68E-10	0.0%
R105	8.70E-12	3.24E-10	0.0%	3.41E-10	0.0%
R106	8.70E-12	3.47E-10	0.0%	3.64E-10	0.0%
R107	8.70E-12	8.37E-10	0.0%	8.54E-10	0.0%
R108	8.70E-12	1.19E-09	0.0%	1.21E-09	0.0%
R109	8.70E-12	3.11E-10	0.0%	3.28E-10	0.0%
R110	8.70E-12	3.36E-10	0.0%	3.53E-10	0.0%
R111	8.70E-12	2.90E-10	0.0%	3.07E-10	0.0%
R112	8.70E-12	2.90E-10	0.0%	3.08E-10	0.0%
R113	8.70E-12	2.76E-10	0.0%	2.94E-10	0.0%
R114	8.70E-12	2.79E-10	0.0%	2.97E-10	0.0%
R115	8.70E-12	2.85E-10	0.0%	3.03E-10	0.0%
R116	8.70E-12	9.58E-10	0.0%	9.75E-10	0.0%
R117	8.70E-12	2.99E-10	0.0%	3.16E-10	0.0%
R118	8.70E-12	3.01E-10	0.0%	3.18E-10	0.0%
R119	8.70E-12	2.91E-10	0.0%	3.09E-10	0.0%
R120	8.70E-12	3.02E-10	0.0%	3.19E-10	0.0%
R121	8.70E-12	3.27E-10	0.0%	3.44E-10	0.0%
R122	8.70E-12	3.29E-10	0.0%	3.47E-10	0.0%
R123	8.70E-12	3.27E-10	0.0%	3.45E-10	0.0%
R124	8.70E-12	3.23E-10	0.0%	3.41E-10	0.0%
R125	8.70E-12	3.53E-10	0.0%	3.71E-10	0.0%
R126	8.70E-12	3.54E-10	0.0%	3.71E-10	0.0%
R127	8.70E-12	3.55E-10	0.0%	3.72E-10	0.0%
R128	8.70E-12	3.55E-10	0.0%	3.72E-10	0.0%
R129	8.70E-12	3.66E-10	0.0%	3.83E-10	0.0%
R130	8.70E-12	3.65E-10	0.0%	3.83E-10	0.0%
R131	8.70E-12	3.63E-10	0.0%	3.81E-10	0.0%
R132	8.70E-12	3.62E-10	0.0%	3.80E-10	0.0%
R133	8.70E-12	3.61E-10	0.0%	3.79E-10	0.0%
R134	8.70E-12	3.61E-10	0.0%	3.78E-10	0.0%
R135	8.70E-12	3.60E-10	0.0%	3.77E-10	0.0%
R136	8.70E-12	3.67E-10	0.0%	3.84E-10	0.0%
R137	8.70E-12	3.66E-10	0.0%	3.83E-10	0.0%
R138	8.70E-12	3.65E-10	0.0%	3.83E-10	0.0%
R139	8.70E-12	3.64E-10	0.0%	3.81E-10	0.0%
R140	8.70E-12	3.63E-10	0.0%	3.81E-10	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R141	8.70E-12	3.63E-10	0.0%	3.80E-10	0.0%
R142	8.70E-12	3.62E-10	0.0%	3.79E-10	0.0%
R143	8.70E-12	3.61E-10	0.0%	3.78E-10	0.0%
R144	8.70E-12	3.61E-10	0.0%	3.78E-10	0.0%
R145	8.70E-12	3.24E-10	0.0%	3.41E-10	0.0%
R146	8.70E-12	3.25E-10	0.0%	3.42E-10	0.0%
R147	8.70E-12	3.27E-10	0.0%	3.44E-10	0.0%
R148	8.70E-12	3.28E-10	0.0%	3.45E-10	0.0%
R149	8.70E-12	3.30E-10	0.0%	3.47E-10	0.0%
R150	8.70E-12	3.29E-10	0.0%	3.47E-10	0.0%
R151	8.70E-12	3.30E-10	0.0%	3.47E-10	0.0%
R152	8.70E-12	3.31E-10	0.0%	3.48E-10	0.0%
R153	8.70E-12	3.31E-10	0.0%	3.48E-10	0.0%
R154	8.70E-12	3.28E-10	0.0%	3.46E-10	0.0%
R155	8.70E-12	3.26E-10	0.0%	3.44E-10	0.0%
R156	8.70E-12	3.25E-10	0.0%	3.42E-10	0.0%
R157	8.70E-12	3.24E-10	0.0%	3.42E-10	0.0%
R158	8.70E-12	3.25E-10	0.0%	3.42E-10	0.0%
R159	8.70E-12	3.26E-10	0.0%	3.43E-10	0.0%
R160	8.70E-12	3.48E-10	0.0%	3.65E-10	0.0%
R161	8.70E-12	3.49E-10	0.0%	3.66E-10	0.0%
R162	8.70E-12	3.51E-10	0.0%	3.69E-10	0.0%
R163	8.70E-12	3.51E-10	0.0%	3.69E-10	0.0%
R164	8.70E-12	3.49E-10	0.0%	3.67E-10	0.0%
R165	8.70E-12	3.52E-10	0.0%	3.69E-10	0.0%
R166	8.70E-12	3.52E-10	0.0%	3.70E-10	0.0%
R167	8.70E-12	3.50E-10	0.0%	3.67E-10	0.0%
R168	8.70E-12	3.53E-10	0.0%	3.70E-10	0.0%
R169	8.70E-12	3.53E-10	0.0%	3.71E-10	0.0%
R170	8.70E-12	3.50E-10	0.0%	3.68E-10	0.0%
R171	8.70E-12	3.51E-10	0.0%	3.68E-10	0.0%
R172	8.70E-12	3.53E-10	0.0%	3.70E-10	0.0%
R173	8.70E-12	3.51E-10	0.0%	3.68E-10	0.0%
R174	8.70E-12	3.51E-10	0.0%	3.69E-10	0.0%
R175	8.70E-12	3.52E-10	0.0%	3.69E-10	0.0%
R176	8.70E-12	3.52E-10	0.0%	3.69E-10	0.0%
R177	8.70E-12	3.53E-10	0.0%	3.70E-10	0.0%
R178	8.70E-12	3.53E-10	0.0%	3.70E-10	0.0%
R179	8.70E-12	3.47E-10	0.0%	3.65E-10	0.0%
R180	8.70E-12	3.48E-10	0.0%	3.65E-10	0.0%
R181	8.70E-12	3.48E-10	0.0%	3.66E-10	0.0%
R182	8.70E-12	3.49E-10	0.0%	3.66E-10	0.0%
R183	8.70E-12	3.49E-10	0.0%	3.67E-10	0.0%
R184	8.70E-12	3.50E-10	0.0%	3.67E-10	0.0%
R185	8.70E-12	3.50E-10	0.0%	3.68E-10	0.0%
R186	8.70E-12	3.51E-10	0.0%	3.68E-10	0.0%
R187	8.70E-12	3.51E-10	0.0%	3.69E-10	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R188	8.70E-12	3.52E-10	0.0%	3.69E-10	0.0%
R189	8.70E-12	3.52E-10	0.0%	3.69E-10	0.0%
R190	8.70E-12	3.52E-10	0.0%	3.70E-10	0.0%
R191	8.70E-12	3.48E-10	0.0%	3.65E-10	0.0%
R192	8.70E-12	3.46E-10	0.0%	3.64E-10	0.0%
R193	8.70E-12	3.47E-10	0.0%	3.64E-10	0.0%
R194	8.70E-12	3.46E-10	0.0%	3.64E-10	0.0%
R195	8.70E-12	3.46E-10	0.0%	3.64E-10	0.0%
R196	8.70E-12	3.47E-10	0.0%	3.64E-10	0.0%
R197	8.70E-12	3.46E-10	0.0%	3.64E-10	0.0%
R198	8.70E-12	3.46E-10	0.0%	3.63E-10	0.0%
R199	8.70E-12	3.46E-10	0.0%	3.63E-10	0.0%
R200	8.70E-12	3.47E-10	0.0%	3.64E-10	0.0%
R201	8.70E-12	3.47E-10	0.0%	3.64E-10	0.0%
R202	8.70E-12	3.46E-10	0.0%	3.64E-10	0.0%
R203	8.70E-12	3.47E-10	0.0%	3.65E-10	0.0%
R204	8.70E-12	3.47E-10	0.0%	3.65E-10	0.0%
R205	8.70E-12	3.47E-10	0.0%	3.64E-10	0.0%
R206	8.70E-12	3.45E-10	0.0%	3.63E-10	0.0%
R207	8.70E-12	3.45E-10	0.0%	3.62E-10	0.0%
R208	8.70E-12	3.44E-10	0.0%	3.62E-10	0.0%
R209	8.70E-12	3.46E-10	0.0%	3.63E-10	0.0%
R210	8.70E-12	3.44E-10	0.0%	3.61E-10	0.0%
R211	8.70E-12	3.46E-10	0.0%	3.63E-10	0.0%
R212	8.70E-12	3.45E-10	0.0%	3.63E-10	0.0%
R213	8.70E-12	3.45E-10	0.0%	3.62E-10	0.0%
R214	8.70E-12	3.38E-10	0.0%	3.55E-10	0.0%
R215	8.70E-12	3.38E-10	0.0%	3.55E-10	0.0%
R216	8.70E-12	3.38E-10	0.0%	3.55E-10	0.0%
R217	8.70E-12	3.37E-10	0.0%	3.55E-10	0.0%
R218	8.70E-12	3.37E-10	0.0%	3.54E-10	0.0%
R219	8.70E-12	3.36E-10	0.0%	3.53E-10	0.0%
R220	8.70E-12	3.35E-10	0.0%	3.53E-10	0.0%
R221	8.70E-12	3.38E-10	0.0%	3.55E-10	0.0%
R222	8.70E-12	3.38E-10	0.0%	3.56E-10	0.0%
R223	8.70E-12	3.39E-10	0.0%	3.56E-10	0.0%
R224	8.70E-12	3.40E-10	0.0%	3.57E-10	0.0%
R225	8.70E-12	3.34E-10	0.0%	3.51E-10	0.0%
R226	8.70E-12	3.33E-10	0.0%	3.50E-10	0.0%
R227	8.70E-12	3.32E-10	0.0%	3.50E-10	0.0%
R228	8.70E-12	3.32E-10	0.0%	3.49E-10	0.0%
R229	8.70E-12	3.37E-10	0.0%	3.54E-10	0.0%
R230	8.70E-12	3.35E-10	0.0%	3.53E-10	0.0%
R231	8.70E-12	3.34E-10	0.0%	3.51E-10	0.0%
R232	8.70E-12	3.35E-10	0.0%	3.52E-10	0.0%
R233	8.70E-12	3.35E-10	0.0%	3.52E-10	0.0%
R234	8.70E-12	3.35E-10	0.0%	3.52E-10	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R235	8.70E-12	3.34E-10	0.0%	3.52E-10	0.0%
R236	8.70E-12	3.34E-10	0.0%	3.52E-10	0.0%
R237	8.70E-12	3.34E-10	0.0%	3.51E-10	0.0%
R238	8.70E-12	3.33E-10	0.0%	3.51E-10	0.0%
R239	8.70E-12	3.33E-10	0.0%	3.50E-10	0.0%
R240	8.70E-12	3.31E-10	0.0%	3.49E-10	0.0%
R241	8.70E-12	3.31E-10	0.0%	3.49E-10	0.0%
R242	8.70E-12	3.30E-10	0.0%	3.48E-10	0.0%
R243	8.70E-12	3.30E-10	0.0%	3.47E-10	0.0%
R244	8.70E-12	3.30E-10	0.0%	3.47E-10	0.0%
R245	8.70E-12	3.30E-10	0.0%	3.47E-10	0.0%
R246	8.70E-12	3.30E-10	0.0%	3.47E-10	0.0%
R247	8.70E-12	3.29E-10	0.0%	3.46E-10	0.0%
R248	8.70E-12	3.29E-10	0.0%	3.47E-10	0.0%
R249	8.70E-12	3.29E-10	0.0%	3.47E-10	0.0%
R250	8.70E-12	3.30E-10	0.0%	3.47E-10	0.0%
R251	8.70E-12	3.29E-10	0.0%	3.47E-10	0.0%
R252	8.70E-12	3.31E-10	0.0%	3.49E-10	0.0%
R253	8.70E-12	3.56E-10	0.0%	3.73E-10	0.0%
R254	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R255	8.70E-12	2.67E-10	0.0%	2.85E-10	0.0%
R256	8.70E-12	2.68E-10	0.0%	2.86E-10	0.0%
R257	8.70E-12	2.69E-10	0.0%	2.86E-10	0.0%
R258	8.70E-12	2.67E-10	0.0%	2.85E-10	0.0%
R259	8.70E-12	2.68E-10	0.0%	2.85E-10	0.0%
R260	8.70E-12	2.69E-10	0.0%	2.86E-10	0.0%
R261	8.70E-12	2.70E-10	0.0%	2.87E-10	0.0%
R262	8.70E-12	2.68E-10	0.0%	2.85E-10	0.0%
R263	8.70E-12	2.54E-10	0.0%	2.71E-10	0.0%
R264	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R265	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R266	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R267	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R268	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R269	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R270	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R271	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R272	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R273	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R274	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R275	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R276	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R277	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R278	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R279	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R280	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R281	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R282	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R283	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R284	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R285	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R286	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R287	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R288	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R289	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R290	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R291	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R292	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R293	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R294	8.70E-12	2.64E-10	0.0%	2.82E-10	0.0%
R295	8.70E-12	2.94E-10	0.0%	3.12E-10	0.0%
R296	8.70E-12	3.09E-10	0.0%	3.26E-10	0.0%
R297	8.70E-12	3.26E-10	0.0%	3.44E-10	0.0%
R298	8.70E-12	3.28E-10	0.0%	3.45E-10	0.0%
R299	8.70E-12	4.39E-10	0.0%	4.56E-10	0.0%
R300	8.70E-12	4.42E-10	0.0%	4.59E-10	0.0%
R301	8.70E-12	2.42E-10	0.0%	2.59E-10	0.0%
R302	8.70E-12	2.55E-10	0.0%	2.72E-10	0.0%
R303	8.70E-12	2.59E-10	0.0%	2.77E-10	0.0%
R304	8.70E-12	2.45E-10	0.0%	2.62E-10	0.0%
R305	8.70E-12	3.74E-10	0.0%	3.92E-10	0.0%
R306	8.70E-12	4.14E-10	0.0%	4.31E-10	0.0%
R307	8.70E-12	4.17E-10	0.0%	4.34E-10	0.0%
R308	8.70E-12	3.05E-10	0.0%	3.22E-10	0.0%
R309	8.70E-12	3.29E-10	0.0%	3.46E-10	0.0%
R310	8.70E-12	2.37E-10	0.0%	2.55E-10	0.0%
R311	8.70E-12	4.42E-10	0.0%	4.59E-10	0.0%
R312	8.70E-12	4.41E-10	0.0%	4.59E-10	0.0%
R313	8.70E-12	4.41E-10	0.0%	4.59E-10	0.0%
R314	8.70E-12	4.41E-10	0.0%	4.58E-10	0.0%
R315	8.70E-12	4.40E-10	0.0%	4.57E-10	0.0%
R316	8.70E-12	2.79E-10	0.0%	2.96E-10	0.0%
R317	8.70E-12	2.46E-10	0.0%	2.64E-10	0.0%
R318	8.70E-12	2.83E-10	0.0%	3.01E-10	0.0%
R319	8.70E-12	2.83E-10	0.0%	3.00E-10	0.0%
R320	8.70E-12	3.62E-10	0.0%	3.80E-10	0.0%
R321	8.70E-12	2.79E-10	0.0%	2.97E-10	0.0%
R322	8.70E-12	3.43E-10	0.0%	3.61E-10	0.0%
R323	8.70E-12	2.97E-10	0.0%	3.14E-10	0.0%
R324	8.70E-12	2.67E-10	0.0%	2.84E-10	0.0%
R325	8.70E-12	3.14E-10	0.0%	3.31E-10	0.0%
R326	8.70E-12	2.88E-10	0.0%	3.05E-10	0.0%
R327	8.70E-12	2.66E-10	0.0%	2.83E-10	0.0%
R328	8.70E-12	2.58E-10	0.0%	2.76E-10	0.0%

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
R329	8.70E-12	2.79E-10	0.0%	2.96E-10	0.0%
R330	8.70E-12	2.31E-10	0.0%	2.48E-10	0.0%
R331	8.70E-12	2.62E-10	0.0%	2.80E-10	0.0%
R332	8.70E-12	2.50E-10	0.0%	2.68E-10	0.0%
R333	8.70E-12	1.67E-10	0.0%	1.85E-10	0.0%
R334	8.70E-12	1.63E-10	0.0%	1.80E-10	0.0%
R335	8.70E-12	1.63E-10	0.0%	1.81E-10	0.0%
R336	8.70E-12	2.74E-10	0.0%	2.91E-10	0.0%
R337	8.70E-12	2.74E-10	0.0%	2.92E-10	0.0%
R338	8.70E-12	2.69E-10	0.0%	2.87E-10	0.0%





















**Table 8B.H22 Modelled Annual Mean NOx Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
E1	25.29	0.28	0.9%	0.05	25.63	85.4%
E2	17.47	0.26	0.9%	0.01	17.75	59.2%
E3	15.54	0.23	0.8%	0.01	15.78	52.6%
E4	14.81	0.23	0.8%	0.01	15.05	50.2%
E5	16.48	0.14	0.5%	0.01	16.63	55.4%
E6	16.44	0.11	0.4%	0.02	16.57	55.2%
E7	12.18	0.16	0.5%	0.03	12.36	41.2%
E8	12.70	0.27	0.9%	0.06	13.03	43.4%
E9	13.60	0.25	0.8%	0.03	13.88	46.3%
E10	13.68	0.17	0.6%	0.03	13.88	46.3%
E11	7.41	0.03	0.1%	0.00	7.44	24.8%
E12	9.65	0.06	0.2%	0.00	9.71	32.4%



**Table 8B.H23 Modelled Daily Mean NOx Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
E1	50.58	4.22	2.1%	0.11	54.91	27.5%
E2	34.94	5.39	2.7%	0.02	40.36	20.2%
E3	31.09	6.36	3.2%	0.01	37.47	18.7%
E4	29.62	6.87	3.4%	0.02	36.51	18.3%
E5	32.97	3.92	2.0%	0.02	36.90	18.5%
E6	32.88	4.48	2.2%	0.04	37.40	18.7%
E7	24.35	5.62	2.8%	0.06	30.03	15.0%
E8	25.41	9.79	4.9%	0.12	35.31	17.7%
E9	27.21	6.13	3.1%	0.05	33.39	16.7%
E10	27.36	4.14	2.1%	0.06	31.56	15.8%
E11	14.82	0.58	0.3%	0.00	15.41	7.7%
E12	19.30	1.21	0.6%	0.00	20.51	10.3%

**Table 8B.H24 Modelled Annual Mean NH<sub>3</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PC Traffic	PEC	%PEC of AQAL
E1	2.78	0.02	0.8%	0.01	2.81	93.5%
E2	2.86	0.02	0.7%	0.01	2.89	96.3%
E3	2.29	0.02	0.6%	0.00	2.31	77.0%
E4	2.02	0.02	0.6%	0.00	2.05	68.2%
E5	1.99	0.01	0.4%	0.00	2.00	66.7%
E6	1.98	0.01	0.3%	0.00	2.00	66.6%
E7	2.03	0.01	0.4%	0.01	2.05	68.3%
E8	2.08	0.02	0.7%	0.01	2.11	70.5%
E9	2.53	0.02	0.7%	0.02	2.57	85.8%
E10	2.88	0.01	0.5%	0.03	2.92	97.5%
E11	1.56	0.00	0.1%	0.00	1.56	52.1%
E12	2.02	0.00	0.2%	0.00	2.03	67.6%

**Table 8B.H25 Modelled Annual Mean SO<sub>2</sub> Concentrations (µg m<sup>-3</sup>)**

ID	Background	PC (Stack)	% PC (stack) of AQAL	PEC	%PEC of AQAL
E1	1.87	0.07	0.4%	1.94	9.7%
E2	1.73	0.07	0.3%	1.79	9.0%
E3	1.73	0.06	0.3%	1.79	8.9%
E4	1.73	0.06	0.3%	1.79	8.9%
E5	2.17	0.03	0.2%	2.21	11.0%
E6	2.17	0.03	0.1%	2.20	11.0%
E7	1.51	0.04	0.2%	1.54	7.7%
E8	1.51	0.07	0.3%	1.57	7.9%
E9	1.51	0.06	0.3%	1.57	7.8%
E10	1.43	0.04	0.2%	1.47	7.3%
E11	0.88	0.01	0.0%	0.89	4.5%
E12	1.56	0.01	0.1%	1.58	7.9%

**Table 8B.H26 Modelled Weekly HF Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL
E1	3.00	0.002	0.5%
E2	3.00	0.002	0.4%
E3	3.00	0.002	0.4%
E4	3.00	0.002	0.4%
E5	3.00	0.001	0.2%
E6	3.00	0.001	0.2%
E7	3.00	0.001	0.3%
E8	3.00	0.002	0.5%
E9	3.00	0.002	0.4%
E10	3.00	0.001	0.3%
E11	3.00	0.000	0.1%
E12	3.00	0.000	0.1%

**Table 8B.H27 Modelled Daily HF Concentrations ( $\mu\text{g m}^{-3}$ )**

ID	Background	PC (Stack)	% PC (stack) of AQAL
E1	6.00	0.04	0.7%
E2	6.00	0.04	0.9%
E3	6.00	0.05	1.1%
E4	6.00	0.06	1.1%
E5	6.00	0.03	0.7%
E6	6.00	0.04	0.7%
E7	6.00	0.05	0.9%
E8	6.00	0.08	1.6%
E9	6.00	0.05	1.0%
E10	6.00	0.03	0.7%
E11	6.00	0.00	0.1%
E12	6.00	0.01	0.2%

**Table 8B.H28 Modelled Acid Deposition (keqN/ha/yr)**

ID	Max. N PC (Stack)	Max. S PC (Stack)	% PC (stack) of CL	Total Max. N PC	Total Max. S PC	% Total PC of CL
E1	0.01	0.01	0.4%	0.01	0.01	0.5%
E2	0.01	0.01	0.4%	0.01	0.01	0.5%
E3	0.01	0.01	0.3%	0.01	0.01	0.4%
E4	0.01	0.01	0.4%	0.01	0.01	0.4%
E5	0.01	0.01	0.2%	0.01	0.01	0.2%
E6	0.00	0.00	0.2%	0.01	0.00	0.2%
E7	0.01	0.01	0.2%	0.01	0.01	0.3%
E8	0.01	0.01	0.4%	0.01	0.01	0.5%
E9	0.01	0.01	0.4%	0.02	0.01	0.5%
E10	0.01	0.01	0.3%	0.02	0.01	0.5%
E11	0.00	0.00	0.1%	0.00	0.00	0.1%
E12	0.00	0.00	0.1%	0.00	0.00	0.1%

**Table 8B.H29 Modelled Nitrogen Deposition (kgN/ha/yr)**

ID	PC (Stack)	% PC (stack) of CL	Total PC	% Total PC of CL
E1	0.152	1.5%	0.185	1.9%
E2	0.141	1.4%	0.179	1.8%
E3	0.120	1.2%	0.140	1.4%
E4	0.124	1.2%	0.137	1.4%
E5	0.074	0.7%	0.087	0.9%
E6	0.061	0.6%	0.085	0.8%
E7	0.083	0.8%	0.121	1.2%
E8	0.144	1.4%	0.191	1.9%
E9	0.133	1.3%	0.245	2.5%
E10	0.090	0.9%	0.258	2.6%
E11	0.017	0.1%	0.017	0.1%
E12	0.030	0.1%	0.031	0.2%

