SLOUGH MULTIFUEL EXTENSION PROJECT

[PINS Ref: EN010129]

Environmental Statement
Volume 3 – Appendix

Appendix 8A – Air Quality Technical Appendix

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8.0 AIR QUALITY TECHNICAL APPENDIX

8.1 Overview

8.1.1 This Environmental Statement (ES) technical appendix includes the construction dust risk assessment for the Proposed Project and provides details of the methods used to quantify air pollutant concentrations at receptors for the future baseline scenario.

8.1.2 The magnitude of contributions from the Consented Development and contributions from background sources to total concentrations at sensitive human receptors are quantified for pollutants emitted from the stack of the Consented Development. This assessment is an update for the Consented Development and determines the Future Baseline using up to date air quality and weather data as well as the “as built” plant parameters. The Proposed Project does not change the air quality impact from the Consented Development.

8.1.3 This report considers emissions from the Consented Development during normal operational conditions. Non routine emissions, such as those which may occur during the commissioning process or other short-term events typically only occur on an infrequent basis, are detected by the process control system and rectified within a short time period and are tightly regulated by the Environment Agency (EA). For this reason, no detailed consideration of emissions associated with non-routine or emergency events is included within this assessment.

8.2 Scope

Combustion Plant Emissions

8.2.1 The model considers the contribution of process emissions on local air quality, under normal operating conditions, from the stack serving the combustion process.

8.2.2 The dispersion of emissions is predicted using the dispersion model ADMS 5.2.

8.2.3 The facility as whole (Consented Development including the Proposed Project) will be regulated under the Industrial Emissions Directive (IED) and in accordance with the waste incineration BREF. The waste incineration BREF was published in 2019.

8.2.4 The results presented in this Environmental Statement report and technical appendix is based on modelling undertaken for the future baseline scenario, with updated emission rates based on updated Guidance set out in the BREF.

8.2.5 The design of the flue gas treatment system in the Consented Development will be fully compliant with current legislation, meeting the requirements of BAT as well as the EA guidance on risk assessment for environmental permits and the IED. In accordance with Article 15, paragraph 2, of the IED, the emission limits that the facility is designed to meet will be based on BAT. BAT-AELs are included in the waste incineration BREF and these have been applied in the air impact assessment accordingly.

8.2.6 The pollutants considered within this assessment from the Consented Development stack are:

- oxides of nitrogen (NO_X), as Nitrogen Dioxide (NO_2);
- particulate matter (as PM_{10} and $PM_{2.5}$ size fractions);
- carbon monoxide (CO);
- sulphur dioxide (SO_2);
- hydrogen chloride (HCl);
- hydrogen fluoride (HF);
- twelve metals (cadmium (Cd), thallium (Tl), mercury (Hg), antimony (Sb), arsenic (As), lead (Pb), chromium (Cr), cobalt (Co), copper (Cu), manganese (Mn), nickel (Ni) and vanadium (V));
- Polycyclic Aromatic Hydrocarbons (PAH), as benzo[a]pyrene;
- polychlorinated dibenzo-para-dioxins and polychlorinated dibenzo furans (referred to as dioxins and furans); and
- volatile organic compounds (VOCs), as benzene.

8.2.7 Emissions of ammonia (NH_3) from the Consented Development have been included in the air quality assessment, due to potential effects on sensitive ecosystems, directly through increased atmospheric concentrations, and indirectly as a component of acid and nutrient nitrogen deposition.

8.2.8 A comparison has been made between predicted model output concentrations, and short-term and long-term Air Quality Assessment Levels (AQAL), set out within Section 8.3.

Construction Dust

8.2.9 The movement and handling of soils and spoil during construction activities has the potential to generate some short-term airborne dust. The Proposed Project requires only minor disturbance to unconsolidated materials.

8.2.10 At present, there are no statutory UK or EU standards relating to the assessment or control of dust.

8.2.11 IAQM provides guidance for good practice qualitative assessment of risk of dust emissions from construction and demolition activities (IAQM, 2014). The guidance considers the risk of dust emissions from unmitigated activities to cause human health (PM_{10}) impacts, dust soiling impacts, and ecological impacts (such as physical smothering, and chemical impacts for example from deposition of alkaline materials). The appraisal of risk is based on the scale and nature of activities and on the sensitivity of receptors, and the outcome of the appraisal is used to determine the level of good practice mitigation required for adequate control of dust.

Sources of Information

8.2.12 The information used within this air quality assessment includes:

- data on emission concentrations to atmosphere from the process, taken from limit values in the IED and BAT-AEL values, or in the case of stack flow parameters, data provided by SSE;
- details of the Consented Development and Proposed Project layout provided by SSE;
- Ordnance Survey mapping;
- Ordnance Survey terrain data;
- baseline air quality data from project specific monitoring, published sources and Local Authorities; and
- meteorological data supplied by ADM Ltd.

Assessment Structure

8.2.13 The remainder of this ES Report Appendix is set out as follows:

- Section 3: Assessment criteria.
- Section 4: Assessment methodology.
- Section 5: Background Contribution Data.
- Section 6: Dispersion modelling results.
- Section 7: Assessment limitations and assumptions.

8.3 Assessment Criteria

Assessment Criteria for the Protection of Human Health

8.3.1 The criteria for the protection of human health, against which impacts from the Proposed Project are evaluated, are set out within Table 8A.1. The criteria are set out in the 2010 Regulations and published guidance by Defra and the EA (Defra and EA, 2021).

8.3.2 Air Quality Objectives were previously provided in the National Air Quality Strategy (NAQS), which was published in 2011, however in the 2019 Clean Air Strategy update there is no reference to any objectives. Therefore, the term Air Quality Assessment Level (AQAL) will be used instead of NAQS or Air Quality Objectives.

8.3.3 For substances not specified in the regulations, the AQAL criteria is taken from EA's air emissions risk assessment guidance.

Table 8A.1: AQAL for air (for the protection of human health)

Pollutant	***Source***	***Concentration (µg/m³)***	***Measured as***
NO_2	EU Air Quality Limit Values	40	Annual Mean
		200	1-hour mean, not to be exceeded more than 18 times per year

Pollutant	***Source***	***Concentration (µg/m³)***	***Measured as***
PM_{10}	EU Air Quality Limit Values	40	Annual Mean
		50	24-hour mean, not to be exceeded more than 35 times a year
$PM_{2.5}$	EU Air Quality Limit Values	25	Annual Mean
SO_2	WHO Guideline	50	Annual Mean
	UK Air Quality Strategy Objective	266	15-min mean, not be exceeded more than 35 times a year
	EU Air Quality Limit Values	350	1-hour mean, not to be exceeded more than 24 times a year
	EU Air Quality Limit Values	125	24-hour mean, not to be exceeded more than 3 times a year
Benzene	UK Air Quality Strategy Objectives	16.25	Running annual mean
	EU Air Quality Limit Values	5	Annual Mean
CO	EU Air Quality Limit Values	10,000	Maximum daily running 8-hour mean
	EA Environmental Standards	30,000	1-hour maximum
HCl	EA Environmental Standards	750	1-hour maximum
HF	EA Environmental Standards	16	Monthly mean
		160	1-hour maximum
PAH, as BaP	EU Air Quality Target Value	0.001	Annual mean
	UK Air Quality Strategy Objectives	0.00025	Annual mean
Pb	EU Air Quality Limit Values	0.5	Annual mean
	UK Air Quality Strategy Objectives	0.25	Annual mean
Hg	EA Environmental Standards	0.25	Annual mean
		7.5	1-hour maximum
Sb		5	Annual mean

Pollutant	*Source*	*Concentration (µg/m³)*	*Measured as*
	EA Environmental Standards	150	1-hour maximum
As	EU Air Quality Target Values	0.006	Annual mean
	EA Environmental Standards	0.003	Annual mean
Cd	EU Air Quality Limit Values	0.005	Annual mean
Cr, as Cr (II) compounds and Cr (III) compounds	EA Environmental Standards	5	Annual mean
		150	1-hour maximum
Cr (VI), oxidation state in PM_{10} fraction	EA Environmental Standards	0.0002	Annual mean
Mn	EA Environmental Standards	0.15	Annual mean
		1,500	1-hour maximum
Ni	EA Environmental Standards	0.02	Annual mean
V	EA Environmental Standards	5	Annual mean
		1	1-hour maximum
NH_3	EA Environmental Standards	180	Annual mean
		2,500	1-hour maximum
PCBs	EA Environmental Standards	0.2	Annual mean
		6	1-hour maximum

Assessment Criteria for Sensitive Ecological Receptors

8.3.4 The UK is bound by the terms of the European Birds and Habitats Directives and the Ramsar Convention. The Conservation of Habitats and Species Regulations 2017 provides for the protection of European sites created under these polices, i.e., Special Areas of Conservation (SACs) designated under the Habitats Directive, Special Protection Areas (SPAs) designated under the Birds Directive, and Ramsar Sites designated as wetlands of international importance under the Ramsar Convention. The 2017 Regulations apply specific provisions of the European Directives to SACs, SPAs, candidate SACs (cSACs) and proposed SPAs (pSPAs), which require them to be given special consideration and further assessment by any development which is likely to lead to a significant effect upon them.

8.3.5 The legislation concerning the protection and management of designated sites and protected species within England is set out within the provisions of the 2017 Regulations, the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000 (as amended).

8.3.6 The impact of emissions from the Proposed Project on sensitive ecological receptors are quantified within this report in two ways:

- as direct impacts arising due to increases in atmospheric pollutant concentrations; and
- indirect impacts arising through deposition of acids and nutrient nitrogen to the ground surface.

8.3.7 The Critical Levels for the protection of vegetation and ecosystems are set out in Table 8A.2, and apply regardless of habitat type. In the case of NH_3 and SO_2, the greater sensitivity of lichens and bryophytes to these pollutants is reflected in the application of stricter AQAL at locations where such species are present. These values have been adopted as the assessment criteria for the impact of the process on designated nature sites.

Table 8A.2: Critical Level (CLe) environmental assessment levels for air (for the protection of designated habitat sites)

Pollutant	***Source***	***Concentration (µg/m³)***	***Measured As***	***Notes***
NH_3	Environment Agency Environmental Permit Guidance	1	Annual mean	For sensitive lichen communities and bryophytes and ecosystems where lichens and bryophytes are an important part of the ecosystem's integrity
		3	Annual mean	For all higher plants (all other ecosystems)
SO_2	Environment Agency Environmental Permit Guidance	10	Annual mean	For sensitive lichen communities and bryophytes and ecosystems where lichens and bryophytes are an important part of the ecosystem's integrity
		20	Annual mean	For all higher plants (all other ecosystems)
NO_X (as NO_2)	Environment Agency Environmental Permit Guidance	30	Annual mean	-
		75	Daily mean	-

Pollutant	*Source*	*Concentration (µg/m³)*	*Measured As*	*Notes*
HF	Environment Agency Environmental Permit Guidance	<5	Daily mean	-
		<0.5	Weekly mean	-

8.3.8 Critical Load criteria for the deposition of acids and nutrient nitrogen are dependent on the habitat type and species present and are specific to the sensitive receptors considered within the assessment. The Critical Loads for each habitat type and designated ecology site are available on the Air Pollution Information System website (Centre for Ecology and Hydrology (CEH), 2022).

8.3.9 The Critical Load criteria adopted for the sensitive ecological receptors considered by the assessment are presented in the model results section of this report.

8.4 Methodology

Overview

8.4.1 This section describes the approach taken to the determination of the future baseline and the assessment of the construction phase of the Proposed Project. This has been broken down into two sub-sections.

- Qualitative assessment of construction dust associated with the Proposed Project;
- Modelling of combustion emissions from the stack for the future baseline scenario. Emissions from the stack have been assessed at two Net Calorific Values (NCVs) for the fuel input: a design NCV fuel of 12MJ/kg and a lower NCV fuel of 10.5MJ/kg, in order to ensure a worst case assessment is carried out.

Construction Phase – Construction Dust Assessment

8.4.2 The following potential activities have been screened as potentially significant, based on the nature of construction activities proposed as part of the Proposed Project (Institute of Air Quality Management, 2014):

- construction (including on-site concrete batching); and
- trackout (HGV movements on unpaved roads and offsite mud on the highway).

Magnitude Definitions

8.4.3 The potential magnitude of dust emissions is categorised as detailed in Table 8A.3 below.

Table 8A.3: Example definition of magnitude of construction activities

Magnitude	*Construction*	*Trackout*
Large	Total building volume >100,000 m^3, on-site concrete batching, sandblasting	>50 Heavy Duty Vehicle (HDV) (>3.5 tonne) peak outward movements per day, potentially dusty surface material (e.g., high clay content), unpaved road length >100m
Medium	Total building volume 25,000 – 100,000m^3, potentially dusty materials e.g., concrete, on-site concrete batching	10 – 50 HDV peak outward movements per day, moderately dusty surface material (e.g., high clay content), unpaved road length 50 – 100m
Small	Total building volume <25,000m^3, low dust potential construction materials .e.g., metal/timber	<10 HDV peak outward movements per day, surface material low dust potential, unpaved road length <50m

Receptor Sensitivity Definitions

8.4.4 The assessment of construction dust has been made with respect to the receptor and area sensitivity definitions as outlined in Table 8A.4 to Table 8A.7 below. Sensitivity definitions have been made with reference to the IAQM guidance; receptors beyond 100 metres are defined as low sensitivity.

Table 8A.4: Receptor sensitivity to construction dust effects

Potential Dust Effect	*Human Perception of Dust Deposition Effects*	*PM_{10} Health Effects*	*Ecological Effects*
High sensitivity	Enjoy a high level of amenity; appearance/ aesthetics/ value of property would be diminished by soiling; receptor expected to be present continuously	Public present for 8 hours per day or more, e.g., residential, schools, care homes	Locations with an international or national designation and the designated features may be affected by dust deposition
Moderate sensitivity	Enjoy a reasonable level of amenity; appearance/ aesthetics/ value of property could be diminished by soiling; receptor not expected to be present continuously	Only workforce present (no residential or high sensitivity receptors) 8 hours per day or more	Locations where there is a particularly important plant species, where dust sensitivity is uncertain or unknown or locations with a

Potential Dust Effect	*Human Perception of Dust Deposition Effects*	*PM_{10} Health Effects*	*Ecological Effects*
			national designation where the features may be affected by dust deposition
Low sensitivity	Enjoyment of amenity not reasonably expected; appearance/ aesthetics/ value of property not diminished by soiling; receptors are transient / present for limited period of time; e.g., playing fields, farmland, footpaths, short term car parks	Transient human exposure, e.g., footpaths, playing fields, parks	Locations with a local designation which may be affected by dust deposition

8.4.5 Distance measured from source to receptor in bands of less than 20m, less than 50m, less than 100m and less than 350m for earthworks and construction. For trackout the receptor distance measured from receptor to trackout route (up to 50m) and up to 500m from the Site exit. These distances bands have been applied in Table 8A.5 and Table 8A.6. For ecological impacts the distance bands are as set out in Table 8A.7.

Table 8A.5: Sensitivity of the area to dust deposition effects on people and property

Receptor Sensitivity	*Number of Receptors*	*Distance from the Source (m)*			
		<20	***<50***	***<100***	***<350***
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Moderate	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 8A.6: Sensitivity of the area to human health impacts

Receptor Sensitivity	*Number of Receptors*	*Distance from the Source (m)*			
		<20	*<50*	*<100*	*<350*
High (annual mean PM_{10} concentration <24 µg/m^3	>100	Medium	Low	Low	Low
	10-100	Low	Low	Low	Low
	1-10	Low	Low	Low	Low
Medium (annual mean PM_{10} concentration (<24 µg/m^3)	>10	Low	Low	Low	Low
	1-10	Low	Low	Low	Low
Low	≥1	Low	Low	Low	Low

Table 8A.7: Sensitivity of the area to ecological impacts

Receptor Sensitivity	*Distance from the Source (m)*	
	<20	***<50***
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Risk Definitions

8.4.6 The potential risks from emissions from unmitigated construction activities have been defined with reference to the magnitude of the potential emission and the sensitivity of the highest receptor(s) within the effect area, as summarised in Table 8A.8 below.

Table 8A.8: Classification of risk of unmitigated impacts

Area of Sensitivity to Activity	*Magnitude*		
	Large	*Medium*	*Small*
Construction			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible
Trackout			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Low risk	Negligible

Low	Low risk	Low risk	Negligible

Assessment of Construction Dust

Magnitude Assessment

8.4.7 For the purpose of this assessment, the Proposed Project is considered to be a small emissions source for fugitive dust emissions from construction related activities.

Receptor Identification

8.4.8 There are no ecological receptors within 50m from the Site so ecological impacts were not assessed further.

8.4.9 There are receptors highly sensitive to dust and particulate within 350m of the Site. The confectionary factory in particular is located approximately 130m directly west of the site. The sensitivity to dust deposition and particulates has therefore been considered high in this assessment.

Area Sensitivity Assessment

8.4.10 The receptor sensitivity to the effects of dust deposition and PM_{10} (human health) impacts has been determined for all activities, based on the closest distance from the identified receptors to those activities, as summarised in Table 8A.9 below. The overall area sensitivity to dust deposition and PM_{10} (human health), based on the area sensitivity for each activity listed in Table 8A.9 below, is considered to be 'high'.

Table 8A.9: Area sensitivity for receptors of construction dust

Activity	*Potential Impact*	*Receptor Sensitivity and Distance to Activity*	*Area Sensitivity*
Construction	Dust deposition	High sensitivity (<10 receptor) <100m	High Risk
	Health PM_{10}	High sensitivity (<10 receptor) <100m	Medium Risk
	Ecology	No sensitive receptors within 50m	Not Applicable
Trackout	Dust deposition	High sensitivity (<10 receptor) <100m	High Risk
	Health PM_{10}	High sensitivity (<10 receptor) <100m	Medium Risk

Activity	*Potential Impact*	*Receptor Sensitivity and Distance to Activity*	*Area Sensitivity*
	Ecology	No sensitive receptors within 50m	Not Applicable

8.4.11 The risk of impacts from unmitigated activities has been determined through a combination of the potential dust emission magnitude and the sensitivity of the area, for each activity to determine the level of mitigation that should be applied. The risk of impacts from unmitigated activities are summarised in Table 8A.10 below.

Table 8A.10: Risk of impacts from unmitigated activities

Activity	*Construction*	*Trackout*
Dust Emission Magnitude	Small	Small
Risk of impacts from unmitigated activities		
Dust soiling (low sensitivity)	Low Risk	Low Risk
Health PM_{10} (low sensitivity)	Low Risk	Low Risk
Ecology	Not Applicable	Not Applicable

8.4.12 The risk assessment for construction dust indicates that there would be a low risk of dust impacts on human health (PM_{10}) and on dust deposition from unmitigated construction and trackout activities. These risk classifications are solely used to select the appropriate schedule of mitigation measures from IAQM guidance.

8.4.13 Mitigation measures to be embedded within the Proposed Project will therefore be defined according to the highest risk category for these activities, as listed in the 'low risk' schedule of measures listed in section 8.2 of the IAQM guidance. The proposed measures are identified in the CEMP.

Modelling of Combustion Emissions from the Stack

Dispersion Model Selection

8.4.14 The assessment of emissions from the Consented Development stack has been undertaken using the latest version of ADMS 5 (V5.2.4). ADMS is a modern dispersion model that has an extensive published validation history for use in the UK. This model has been extensively used throughout the UK to demonstrate regulatory compliance.

Modelled Scenarios

8.4.15 The dispersion modelling undertaken in the assessment of emissions from the stack are:

- modelling of impacts on a variable resolution receptor grid and at discrete sensitive human receptors for all pollutants, at a release height of 90m; and
- modelling of impacts at selected sensitive ecological receptors, at a release height of 90m.

Model Inputs

8.4.16 The general model conditions used in the assessment are summarised in Table 8A.11. Other more detailed data used to model the dispersion of emissions is considered below.

Table 8A.11: General ADMS 5 model conditions

VARIABLE	INPUT
Surface roughness at source	0.5
Surface roughness at meteorological site	0.2
Receptors	Selected discrete receptors
	Nested receptor grid, variable spacing
Receptor location	X, Y co-ordinates determined by GIS,
	z = 1.5m for residential receptors and AQMAs
	z = 0m for ecological receptors
Source location	X,Y co-ordinates determined by GIS
Emissions	IED emission limits, BAT-AEL values and data provided by SSE.
Sources	1 x Stack
Meteorological data	5 years of meteorological data, Heathrow Airport Meteorological Station (2015 – 2019)
Terrain data	None
Buildings that may cause building downwash effects	Consented Development building
Hours of Operation	8,760 hours

Emissions Data

8.4.17 A release height of 90m has been modelled, with a stack internal diameter of 2.68m.

8.4.18 The physical properties of the combustion emission source, as represented within the model, are presented in Table 8A.12.

8.4.19 The position of the stack within the modelled domain are illustrated in Figure A7. 1 of Annex A to this report.

Table 8A.12: Properties – emissions stack

Parameter	*Unit*	*12 MJ/kg*	*10.5 MJ/kg*
Stack position	(NGR) m	495283, 181446	495283, 181446
Stack release height	m (above ground level)	90	90
Effective internal stack diameter	m	2.68	2.68
Flue temperature	°C	150	150
Moisture	%	20.5	20.5
Flue O_2 content (dry)	%	6.1	6.1
Stack gas exit velocity	m/s	23.3	24.3
Stack flow (actual)	Am^3/s	131.1	137
Stack flow at reference conditions (STP, dry, 11% O2)	Nm^3/s	101.2	105.1

8.4.20 The modelled pollutant emission rates (in g/s) are determined by the daily average BAT-AEL values set out within the BREF or Emission Limit Values (ELVs) set out within the IED. The emissions limits assumed to apply to the Consented Development are shown in Table 8A.13.

8.4.21 Pollutant mass emission rates from the waste combustion process associated with the Consented Development (in g/s) have been calculated by multiplying the daily average and half hour average ELVs by the volumetric flow rate at reference conditions. The pollutant mass emission rates from the stack, as used within the dispersion modelling assessment, are presented in Table 8A.14.

8.4.22 Emissions of benzo[a]pyrene from the stack are not included in the IED. Conservative emission rates for these pollutants have been assumed for this assessment, derived from the BREF for Waste Incineration.

8.4.23 Emissions of NH_3 are based on the Consented Development's AEL value set out in its environmental permit.

8.4.24 This assessment is based on a hypothetical scenario in which the Consented Development operates at continuous design load (8,760 hours per year). No time-based variation in stack emissions has therefore been accounted for within the model. This ensures that emissions are modelled against all meteorological conditions, providing a robust assessment of short-term impacts.

8.4.25 For the purposes of the assessment of emission of particulate matter (as PM_{10}) and fine particulate matter ($PM_{2.5}$) have been modelled at the Particulate ELV whereas in practice they will be a fraction of the total particulates. This approach will result in the over-estimation of impacts on local PM_{10} and $PM_{2.5}$ concentrations.

8.4.26 Emissions of Group 1 metals (Cd and Tl) from the stack have individually been taken to be emitted at the AQAL for the whole group (see Table 8A.1).

8.4.27 The BAT-Achievable Emission Level (BAT-AELs) (Official Journal of the European Union, 2018) included in the current waste incineration BREF are included in Table 8A.13.

Table 8A.13: Air Emission Limit Values (ELVs) as specified in the Industrial Emission Directive (IED, 2010/75/EU) and the BAT-AELS (Official Journal of the European Union, 2017)

Substance	*Emission Limit (mg/Nm^3)**	
	Half-Hour Average (Based On IED)	***Daily Average (Based On BAT-AEL)***
NO_X (as NO_2)	400	120
Total dust (assumed as PM_{10})	30	5
SO_2	200	40
TOC	20	10
CO	100	50
HCl	60	8
HF	4	1
Group 1 metals (Cd + Tl, total)		0.02
Group 2 metals (Hg)[1]		0.02
Group 3 metals (Sb + As + Pb + Cr + Co + Cu + Mn + Ni + V, total)		0.3
Dioxins and furans[2]		0.00000006
NH3		5
PAH, as benzo[a]pyrene		0.01
PCBs		0.005

*** Reference conditions are dry flue gas, at 0°C and 11% O_2**

[1] Sample averaging times for metals are 30 minutes to 8 hours
[2] Sample averaging times for dioxins are 6 hours to 8 hours, total concentrations of dioxins and furnace calculated as a toxic equivalent

Table 8A.14: Pollutant emission rates (per stack)

Pollutant	*12 MJ/kg*		*10.5 MJ/kg*	
	Daily Average Emission Rate (g/s)	*Half Hour Average Emission Rate (g/s)*	*Daily Average Emission Rate (g/s)*	*Half Hour Average Emission Rate (g/s)*
NO_X (As NO_2)	12.15	40.48	12.61	42.03
Total Dust (PM_{10} and $PM_{2.5}$ both assessed at Total Dust AEL)	0.51	3.04	0.53	3.15
SO_2	4.05	20.24	4.20	21.02
TOC	1.01	2.02	1.05	2.10
CO	5.06	10.1	5.25	10.51
HCl	0.81	6.07	0.84	6.30
HF	0.1	0.4	0.11	0.42
NH_3[3]	0.51	-	0.53	-
Group 1 Metals[4] (Cd, Tl)	0.00202	-	0.0021	-
Group 2 Metals (Hg)	0.00202	-	0.0021	-
Group 3 Metals[4] (Sb, As, Pb, Cr (Total), Co, Cu, Mn, Ni, Pb, V)	0.0304	-	0.0315	-
Dioxins And Furans	6.1×10^{-09}	-	6.3×10^{-09}	-

Additional Consideration of Group 3 Metal Emissions

8.4.28 In April 2010 the EA published revised Environmental Standards for arsenic, nickel and chromium (VI) in its EA Permit Guidance (see Table 8A.1). The new guidelines are lower and more stringent than earlier Environmental Standards. In particular, the new guidelines include more conservative assumptions for the assessment of Group 3 metal emissions, which make it possible for an assessment to identify a theoretical risk that the Environmental Standard value could be exceeded in the case of arsenic, nickel and chromium (VI). The EA has therefore provided guidance on the assessment of Group 3 metal releases from waste combustion processes (EA, 2016) as set out in paragraphs 8.4.29 and 8.4.30 below.

[3] Not included in current IED. A value of 10mg/Nm^3 was used, as set out in the draft BREF.
[4] Emissions of the listed group 1 and 3 metals are taken as 100% the respective limit value for each metal group

8.4.29 In the first instance, a worst case screening step is carried out, whereby each substance is modelled as being emitted at the ELV for all nine Group 3 metals, 0.3mg/m^3. Actual emission rates at comparable facilities are normally well below the BAT-AEL, and as such the worst case screening step is very conservative. Where the initial appraisal results in a modelled result where the Consented Development Contribution (CDC) exceeds 1% of the long term AQAL or 10% of the short term AQAL for that substance, then the Predicted future baseline (Total), which includes the background concentration, is compared with the AQAL. Where the total is greater than 100% of the AQAL, then emissions of those substances have been considered further in accordance with the second step of the guidance.

8.4.30 The second step requires the predictions to be revised with reference to a range of measured values recorded from testing on 18 operational municipal waste incinerators and waste wood incinerators between 2007 and 2015. As in the first step, where the CDC exceeds 1% of the long term AQAL or 10% of the short term AQAL for that substance, then the predicted future baseline is compared with the AQAL. This can be screened out where the total is less than 100% of the AQAL. Further justification is required to be made to the EA if data lower than the listed maximum emission concentrations are used in the assessment.

Modelled Domain – Discrete Receptors

Sensitive Human Receptors

8.4.31 Ground-level concentrations of the modelled pollutants relevant to human health have been predicted at discrete air quality sensitive receptors, as listed in Table 8A.15. The locations of these sensitive human receptors are also shown in **Figure 8.1** of Volume 2 of this ES Report **[EN010129/APP/6.2]**. The residential receptors have been selected to be representative of residential dwellings in the area around the stack.

8.4.32 The flagpole height of all sensitive human receptors listed in Table 8A.15 has been set within the model at 1.5m.

Table 8A.15: Modelled domain, selected discrete human receptor locations

Receptor Id	*Receptor Description*	*Grid Reference*	
		X	**Y**
R1	Bodmin Ave Residential Property	495403	181759
R2	Birch Grove Residential Property	495672	181655
R3	Farmburn Grove Residential Property	495868	181578
R4	Melbourne Ave Residential Property	496253	181282
R5	Cippenham Lane Residential Property	494923	180924
R6	Greystoke Road Residential Property	494630	181847
R7	Tuns Lane AQMA Residential Property	496365	180459
R8	Town Centre AQMA Residential Property	496900	180135

Receptor Id	*Receptor Description*	*Grid Reference*	
		X	**Y**
R9	Baylis Court School Educational Facility	496616	181617
R10	Norfolk Ave Residential Property	496208	181778
R11	Scafell Rd Residential Property	494684	182036
R12	Burnham Ln Residential Property	494370	181249
R13	Diffusion tube 1	495199	181526
R14	Diffusion tube 2	495306	181504
R15	Diffusion tube 3	495660	181404
R16	Diffusion tube 4	496401	179934
R17	Diffusion tube 5	496262	181909
R18	Diffusion tube 6	495848	184748
R19	Industrial Activity that may be sensitive to acid gas 1	495219	181270
R20	Industrial Activity that may be sensitive to acid gas 2	495450	181280
R21	Industrial Activity that may be sensitive to acid gas 3	495492	181384
R22	Industrial Activity that may be sensitive to acid gas 4	495687	181359
R23	Industrial Activity that may be sensitive to acid gas 5	495242	180986
R24	Confectionary Factory	495140	181488

Sensitive Ecological Receptors

8.4.33 In accordance with the EA's air emissions risk assessment guidance, the impacts associated with emissions from the combustion process on statutory sensitive ecological sites have been quantified. The assessment has considered SSSIs within 2km and European designated sites (i.e., RAMSAR, Special Areas of Conservation (SAC), Special Protection Area (SPA)), within 15km from the Consented Development stack, as recommended by the risk assessment guidance. The EA also identified further ecological sites which would need to be assessed: two local ancient woodlands.

8.4.34 Locations have been listed in Table 8A.16 and are also shown in **Figure 8.2** of Volume 2 of this ES Report **[EN010129/APP/6.2]**.

8.4.35 For sensitive ecological receptors, the flagpole height has been set within the model at 0m.

Table 8A.16: Modelled domain – ecological receptor locations, Critical Levels and baseline concentrations

Receptor ID	*Receptor Description*	*Grid Reference*	
		X	**Y**
E1	Burnham Beeches SAC	495052	184315
E2	Windsor Forest and Great Park SAC	495519	175402
E3	Bisham Woods and Chilterns Beechwoods SAC	486474	185335
E4	Ancient Woodland	494213	183257
E5	Ancient Woodland	494633	183292

Modelled Domain – Receptor Grid

8.4.36 Emissions from the stack have also been modelled on a receptor grid of variable spacing, in order to determine:

- the location and magnitude of maximum ground level impacts; and
- to enable the generation of pollutant isopleth plots.

8.4.37 The dispersion model output is reported at discrete receptors that are representative of sensitive locations and as a nested grid of receptor locations. The inner grid extends 1,000m at a resolution of 50m x 50m. The middle grid extends from 1,000m to 2,500m at a resolution of 100m x 100m. The outer grid extends from 2,500m to 7,500m at a resolution of 500m x 500m. Details of the receptor grid are summarised in Table 8A.17. All gridded model outputs are reported at a height above ground level of 1.5m.

Table 8A.17: Modelled domain, receptor grid

Grid Spacing (m)	*Dimensions (m)*	*National Grid Reference of Centre Point*
50	2000 x 2000	495262, 181460
100	5000 x 5000	
500	15000 x 15000	

Meteorological Data

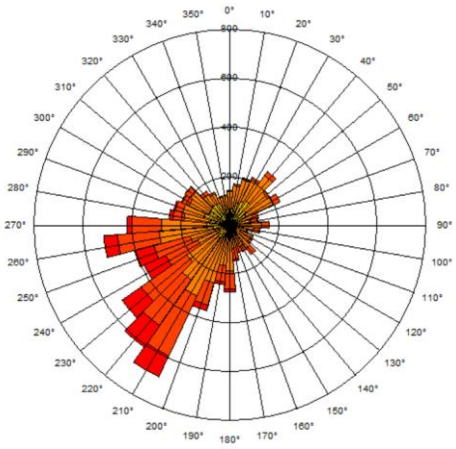
8.4.38 Actual measured hourly-sequential meteorological data is available for input into dispersion models, and it is important to select data as representative as possible for the development modelled. This is usually achieved by selecting a meteorological station as close to the Site as possible, although other stations may be used if the local terrain and conditions vary considerably, or if the station does not provide sufficient data.

8.4.39 The meteorological site that was selected for the assessment is Heathrow Airport, located approximately 11km south-east of the Site, at a flat airfield, and therefore a surface roughness of 0.2m (representative of an agricultural area) has been selected for the meteorological site.

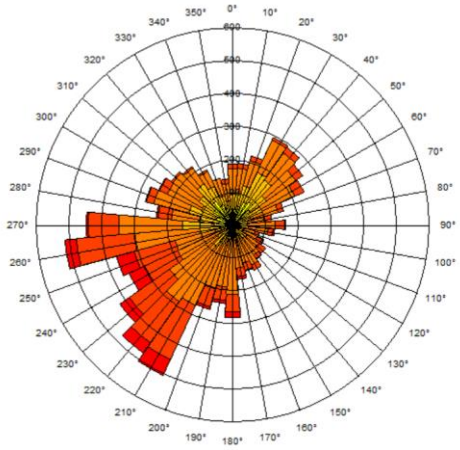
8.4.40 The modelling for this assessment has utilised 5 years of meteorological data for the period 2015 – 2019. Wind roses for each of the years within this period are shown in Figure 8A.1.

Figure 8A.1: Wind roses for Heathrow Airport, 2015 to 2019

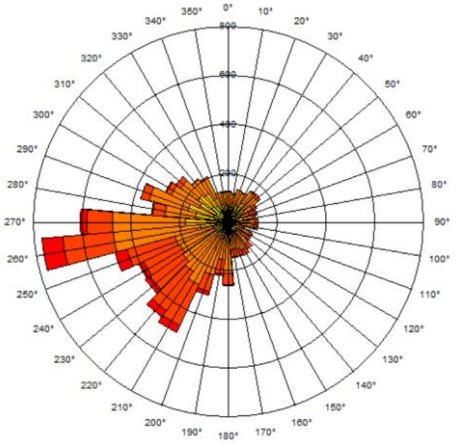
2015



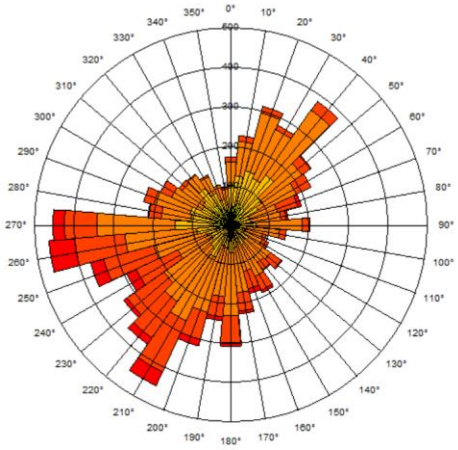
2016



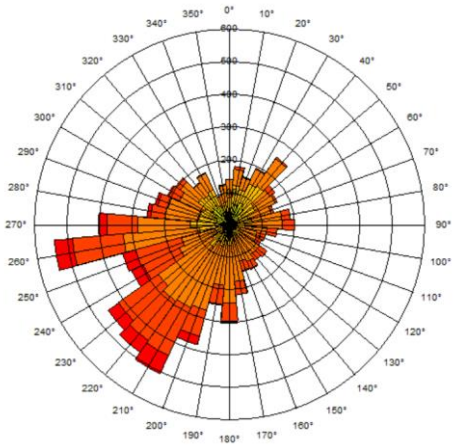
2017

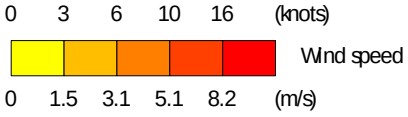


2018



2019





Building Downwash Effects

8.4.41 The buildings that make up the Consented Development have the potential to affect the dispersion of emissions from the stack. The ADMS buildings effect module has therefore been used to incorporate building downwash effects as part of the modelling. Buildings greater than one third of the range of stack heights modelled have been included within the modelling assessment.

8.4.42 Buildings associated with, or in close proximity to, the Consented Development that are considered to be of sufficient height and volume to potentially impact on the dispersion of emissions from the Consented Development stack are the Consented Development boiler house and the two cooling towers. One cooling tower is associated with the Consented Development (and is located within the Proposed Project boundary) and one cooling tower forms part of the generating assets on the adjacent site.

8.4.43 Parameters representing the buildings included in the model are shown in Table 8A.18 and a plan showing the buildings layout used in the ADMS simulation is illustrated in Figure 8A.1. The dimensions of the buildings have been rounded to the nearest whole number in Table 8A.18.

Table 8A.18: Buildings incorporated into the modelling assessment

Building	*Building Centre Grid Reference (X, Y)*	*Height (m)*	*Length/Diameter (m)*	*Width (m)*	*Angle (°)*
Boiler Hall	495321, 181435	48	50	45	107
Cooling Tower 7	495381, 181546	48.8	40	-	-
Cooling Tower 8	495435, 181532	48.9	40	-	-

8.4.44 The local area upwind and downwind of the Site is flat, and predominantly industrial and residential on all sides. A surface roughness of 0.5m, corresponding to the minimum value associated with suburban areas, has therefore been selected to represent the local terrain.

8.4.45 Site-specific terrain data has not been used in the model, as typically terrain data will only have a marked effect on predicted concentrations where hills with gradient of more than 1 in 10 are present in the vicinity of the source, which is not the case in the area around the Consented Development.

NO_X to NO_2 Conversion

8.4.46 Emissions of nitrogen oxides from industrial point sources are typically dominated by nitric oxide (NO), with emissions from combustion sources typically in the ratio of nitric oxide to nitrogen dioxide of 9:1. However, it is nitrogen dioxide that has specified AQAL due to its potential impact on human health. In the ambient air, nitric oxide is oxidised to nitrogen dioxide by the ozone

present, and the rate of oxidation is dependent on the relative concentrations of nitric oxide and ozone in the ambient air.

8.4.47 For the purposes of detailed modelling, and in accordance with EA technical guidance it is assumed that 70% of nitric oxide emitted from stack is oxidised to nitrogen dioxide in the long term and 35% of the emitted nitric oxide is oxidised to nitrogen dioxide in the local vicinity of the Consented Development in the short-term.

Calculation of Deposition at Sensitive Ecological Receptors

8.4.48 The deposition of nutrient nitrogen and acid at sensitive ecological receptors is calculated, using the modelled Consented Development contribution predicted at the receptor points. The deposition rates are determined using conversion rates and factors contained within EA guidance (EA, 2011), which account for variations deposition mechanisms in different types of habitat.

8.4.49 The conversion rates and factors used in the assessment are detailed in Table 8A.19 and Table 8A.20.

Table 8A.19: Conversion factors – calculation of nutrient nitrogen deposition

Pollutant	*Deposition Velocity Grasslands (m/s)*	*Deposition Velocity Forests (m/s)*	*Conversion Factor (µg/m³/s To kg/Ha/Yr)*
NO_X as NO_2	0.0015	0.003	96
NH_3	0.02	0.03	259.7

Table 8A.20: Conversion Factors – Calculation of Acid Deposition

Pollutant	**Deposition Velocity Grasslands (m/s)**	**Deposition Velocity Forests (m/s)**	**Conversion Factor (µg/m³/s To kg/ha/yr)**	**Conversion Factor (kg/ha/yr to kq/ha/yr)**
SO_2	0.012	0.024	157.7	0.0625
NO_2	0.0015	0.003	96	0.0714
NH_3	0.02	0.03	259.7	0.0714
HCl	0.025	0.06	306.7	0.0282
HF	0.025	0.06	306.7	0.0282

8.4.50 As HCl is readily soluble in water, wet deposition processes can also significantly contribute to total acid deposition. The conservative assumption has therefore been made in this assessment that the wet deposition will be equal to dry deposition, in effect doubling the predicted Consented Development contribution from HCl at the sensitive receptor.

Specialised Model Treatments

8.4.51 Emissions have been modelled such that they are not subject to dry and wet deposition or depleted through chemical reactions. The assumption of continuity of mass is likely to result in an over-estimation of impacts at receptors.

8.5 Background Contribution Data

8.5.1 The selected background concentrations for each of the pollutants are listed in Table 8A.21.

8.5.2 Wherever possible local monitoring data has been used for the background contributions to baseline concentrations. If this was not possible then data was obtained from representative industrial sites using official national monitoring data from the relevant monitoring network, as listed in the table accordingly.

8.5.3 Where Defra data has been used in the assessment, short-term background concentrations have been calculated by multiplying the selected annual mean background concentration by a factor of two LAQM TG(16). For 24-hour PM_{10} background concentration the annual mean background concentration was multiplied by a factor of 1.5 as proposed in EA guidance. For these data, the values for the grid square in which the stack lie are presented in Table 8A.21, although concentrations applied to receptors vary according to which 1x1km grid square they lie in.

Table 8A.21: Background concentrations selected for use in the assessment

Pollutant	*Background Concentration ($\mu g/m^3$)*		*Source*
	Long-Term	**Short-Term**	
NO_2	24.05	48.1	Defra background value for 2018. Short-term concentration is 2 times long-term concentration.
NO_X	Varies, see results		From APIS. 2017-2019 average. 24-hour concentration is 1.5 times long-term concentration
PM_{10}	16.94	25.41	Defra background value for 2018. 24-hour concentration is 1.5 times long-term concentration
$PM_{2.5}$	11.70	17.55	Defra background value for 2018.
SO_2	3.76	7.52	Defra background value for 2001. Short-term concentration is double long-term concentration
Benzene	0.779	1.558	Defra background value for 2001. Short-term

Pollutant	*Background Concentration ($\mu g/m^3$)*		*Source*
	Long-Term	**Short-Term**	
			concentration is double long-term concentration
HCl	0.2	0.4	Background concentration from Stoke Ferry for 2015.
HF	0.003	0.006	Long-term background concentrations from EPAQS. Short-term concentration is double long-term concentration.
CO	129	258	Defra background value for 2001. Short-term concentration is double long-term concentration
Total PAH	8.23×10^{-4}	-	Measured concentration from Scunthorpe Low Stanton for 2017
B[a]P	8.23×10^{-4}	-	Measured concentration from Scunthorpe Low Stanton for 2017
Pb	8.84×10^{-3}	-	Measured concentration from London Cromwell Road for 2013
Cd	1.5×10^{-4}	-	Measured concentration from London Cromwell Road for 2013
Hg	2.0×10^{-3}	4.0×10^{-3}	Maximum monitored concentration at all urban industrial sites across the UK 2012 to 2016
Sb	7.8×10^{-4}	1.56×10^{-3}	Maximum monitored concentration at all urban industrial sites across the UK 2012 to 2016
As	8.55×10^{-4}	-	Measured concentration from London Cromwell Road for 2013
Cr, as Cr (II) compounds and Cr (III) compounds	4.93×10^{-3}	9.86×10^{-3}	Measured concentration from London Cromwell Road for 2013

Pollutant	*Background Concentration (µg/m³)*		*Source*
	Long-Term	**Short-Term**	
Cu	3.54×10^{-2}	7.08×10^{-2}	Measured concentration from London Cromwell Road for 2013
Mn	8.73×10^{-3}	1.75×10^{-2}	Measured concentration from London Cromwell Road for 2013
Ni	1.80×10^{-3}	-	Measured concentration from London Cromwell Road for 2013
V	1.48×10^{3}	2.96×10^{-3}	Measured concentration from London Cromwell Road for 2013
NH_3	1.709	3.418	From APIS. Short-term concentration is double long-term concentration
PCBs	1.05×10^{-5}	2.10×10^{-5}	Measured concentration from Manchester Law Courts for 2016 to 2017.
Dioxins and furans	1.2×10^{-5}	-	Measured concentration from Manchester Law Courts for 2016 to 2017.

8.6 Dispersion Modelling Results

Modelling Results for NO_2

8.6.1 This section focuses on the contribution to the local annual mean and short-term NO_2 concentrations that would occur as a result of the operation of the stack.

8.6.2 With a release height of 90m, the maximum CDC to ground level NO_2 concentrations would occur to the north-east of the location of the stack in a residential area in Slough. At this location, the predicted annual mean NO_2 CDC is 0.6µg/m³, which is 1.4% of the AQAL. The Future Baseline concentration is 24.6µg/m³ which is 62% of the AQAL.

8.6.3 The maximum predicted CDC to short term NO_2 concentrations is 14.0µg/m³. Such an impact is 7% of the 99.79th percentile 1-hour AQAL for NO_2 of 200µg/m³. The future baseline concentration in the area around the location of maximum impact is 62.1µg/m³, which is 31% of the AQAL.

8.6.4 The predicted CDCs to the annual mean NO_2 concentrations that would occur at the selected discrete receptors, are presented in Table 8A.22. Any errors in the additions of CDC to the baseline concentrations are due to rounding only.

8.6.5 The maximum predicted CDC to the annual mean NO_2 concentrations at selected receptors is +0.5 µg/m^3, and this would occur in the vicinity of receptors R10 and R17. The annual mean NO_2 future baseline at all receptors would remain below the annual mean NO_2 AQAL.

8.6.6 There is no material difference in the predicted impacts for the model scenarios based on the use of fuels with a higher or lower net caloric value.

Table 8A.22: Predicted future baseline annual mean NO_2 concentrations at discrete receptors (µg/m^3)

Receptor	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60
R2	0.2	0.1	0.1	0.1	0.1	0.2	0.5	24.3	61	0.2	0.1	0.1	0.1	0.1	0.2	0.5	24.2	61
R3	0.4	0.3	0.4	0.3	0.3	0.4	1.1	24.5	61	0.4	0.3	0.4	0.3	0.3	0.4	1.1	24.5	61
R4	0.2	0.2	0.2	0.2	0.2	0.2	0.6	24.3	61	0.2	0.2	0.2	0.2	0.2	0.2	0.6	24.3	61
R5	<0.1	<0.1	<0.1	0.1	<0.1	0.1	0.3	24.2	60	<0.1	<0.1	<0.1	0.1	<0.1	0.1	0.3	24.2	60
R6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	24.1	60
R7	0.1	0.1	0.1	<0.1	<0.1	0.1	0.3	24.2	60	0.1	0.1	0.1	<0.1	<0.1	0.1	0.3	24.2	60
R8	<0.1	<0.1	0.1	<0.1	<0.1	0.1	0.3	24.2	60	<0.1	<0.1	0.1	<0.1	<0.1	0.1	0.3	24.2	60
R9	0.4	0.3	0.4	0.3	0.3	0.4	1.1	24.5	61	0.4	0.3	0.4	0.3	0.3	0.4	1.1	24.5	61
R10	0.5	0.4	0.6	0.4	0.4	0.6	1.4	24.6	62	0.5	0.5	0.6	0.4	0.4	0.6	1.4	24.6	62
R11	<0.1	<0.1	<0.1	0.1	<0.1	0.1	0.3	24.2	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	24.1	60
R12	0.1	0.1	<0.1	0.1	0.1	0.1	0.3	24.2	60	0.1	0.1	<0.1	0.1	0.1	0.1	0.3	24.2	60
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60
R15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	24.1	60
R16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	24.1	60
R17	0.5	0.4	0.5	0.4	0.4	0.5	1.3	24.6	61	0.5	0.4	0.5	0.4	0.4	0.5	1.3	24.6	61
R18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	24.1	60
R19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60

Receptor	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60
R21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60
R22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	24.1	60
R23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	24.1	60
R24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24.1	60

Table 8A.23: Predicted future baseline 99.79th Percentile of the 1h mean NO_2 concentrations at discrete receptors (µg/m^3)

Receptor	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	2.3	2.5	1.9	3	1.9	3	<0.1	51.1	26	2.3	2.7	1.9	2.9	1.8	2.9	1.5	51.0	26
R2	10.4	9.4	8.3	8.7	8.5	10.4	<0.1	58.5	29	10.4	9.2	8.2	8.2	8.4	10.4	5.2	58.5	29
R3	13.9	13.3	13.1	13.1	13.2	13.9	<0.1	62.0	31	14	13.2	13.3	13.3	13.2	14	7	62.1	31
R4	12.2	11.9	12	11.2	11.6	12.2	<0.1	60.3	30	12.4	12.1	12.2	11.3	11.8	12.4	6.2	60.5	30
R5	10.1	8.4	8.6	11.5	9.2	11.5	<0.1	59.6	30	10.1	8.4	8.5	11.5	9.2	11.5	5.8	59.6	30
R6	9.8	11.3	11.2	11.4	12.1	12.1	<0.1	60.2	30	10	11.3	11.2	11.6	12.1	12.1	6	60.2	30
R7	8.8	8.5	9.1	8.7	8.7	9.1	<0.1	57.2	29	9	8.7	9.3	8.9	8.9	9.3	4.7	57.4	29

Receptor	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R8	6.7	6.7	7.7	6.5	7	7.7	<0.1	55.8	28	6.8	6.8	7.8	6.6	7.2	7.8	3.9	55.9	28
R9	10	10.1	10.1	10.1	10.1	10.1	<0.1	58.2	29	10.3	10.3	10.4	10.3	10.3	10.4	5.2	58.5	29
R10	12.9	12.9	13	12.8	13	13	<0.1	61.1	31	13.2	13.2	13.3	13	13.3	13.3	6.7	61.4	31
R11	12.9	12.1	11.3	11.6	12.1	12.9	<0.1	61.0	30	13	12.3	11.4	11.6	12.2	13	6.5	61.1	31
R12	13	12.8	12.2	12.4	12.5	13	<0.1	61.1	31	13.3	13	12.3	12.7	12.6	13.3	6.7	61.4	31
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	48.1	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	48.1	24
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	48.1	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	48.1	24
R15	5.9	5.6	5.4	4.1	4.1	5.9	<0.1	54.0	27	5.8	5.4	5.3	3.8	4	5.8	2.9	53.9	27
R16	6.8	7	7.3	7.2	7.4	7.4	<0.1	55.5	28	7	7.1	7.5	7	7.5	7.5	3.8	55.6	28
R17	12.2	12.2	12.1	12.2	12.2	12.2	<0.1	60.3	30	12.5	12.5	12.4	12.4	12.5	12.5	6.3	60.6	30
R18	4.1	4.2	4.4	4.5	4.5	4.5	<0.1	52.6	26	4.2	4.2	4.5	4.7	4.6	4.7	2.3	52.8	26
R19	0.2	0.1	0.1	0.5	0.2	0.5	<0.1	48.6	24	0.2	0.1	0.1	0.4	0.2	0.4	0.2	48.5	24
R20	0.7	1	0.8	0.7	0.6	1	<0.1	49.1	25	0.7	1	0.7	0.7	0.6	1	0.5	49.1	25
R21	0.4	0.7	0.5	0.3	0.3	0.7	<0.1	48.8	24	0.3	0.7	0.5	0.3	0.3	0.7	0.3	48.8	24
R22	6.4	6.8	6.7	5	4.8	6.8	<0.1	54.9	27	6.3	6.7	6.5	4.9	4.6	6.7	3.4	54.8	27
R23	6.3	6.1	6.3	7.7	6.5	7.7	<0.1	55.8	28	6.2	6	6.1	7.6	6.4	7.6	3.8	55.7	28
R24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	48.1	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	48.1	24

Modelling Results for PM_{10} and $PM_{2.5}$

8.6.7 The CDC to annual mean PM_{10} and $PM_{2.5}$ concentrations at discrete receptors due to the operation of the Consented Development, at the selected discrete receptors, is presented in Table 8A.24 to Table 8A.26.

8.6.8 The maximum predicted CDC to the annual mean PM_{10} and $PM_{2.5}$ concentrations at the selected discrete receptors is <0.1µg/m^3.

8.6.9 The modelling results show that predicted annual mean concentrations are below the respective Environmental Standards for PM_{10} and $PM_{2.5}$.

Table 8A.24: Predicted future baseline annual mean PM_{10} concentrations at discrete receptors (µg/m^3)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42
R3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42
R4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42
R5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42
R10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42
R11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	42
R18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42
R24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16.9	42

Table 8A.25: Predicted future baseline 90.41th percentile of the 24h mean PM_{10} concentrations at discrete receptors (µg/m^3)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51
R2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	25.6	51	0.2	0.2	0.2	0.2	0.1	0.2	0.4	25.6	51
R3	0.5	0.5	0.5	0.4	0.4	0.5	1.1	26	52	0.5	0.4	0.5	0.4	0.4	0.5	1.1	26	52
R4	0.3	0.3	0.3	0.2	0.3	0.3	0.6	25.7	51	0.3	0.3	0.3	0.2	0.3	0.3	0.6	25.7	51
R5	<0.1	<0.1	<0.1	0.1	<0.1	0.1	0.3	25.6	51	<0.1	<0.1	<0.1	0.1	<0.1	0.1	0.3	25.5	51
R6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	25.5	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	25.5	51
R7	0.2	0.1	0.2	0.1	0.1	0.2	0.4	25.6	51	0.2	0.1	0.2	0.1	0.1	0.2	0.4	25.6	51

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R8	0.1	0.1	0.2	0.1	0.1	0.2	0.3	25.6	51	0.1	0.1	0.2	0.1	0.1	0.2	0.3	25.6	51
R9	0.5	0.4	0.5	0.4	0.4	0.5	1	25.9	52	0.5	0.4	0.5	0.4	0.4	0.5	1	25.9	52
R10	0.6	0.6	0.7	0.5	0.6	0.7	1.4	26.1	52	0.6	0.6	0.7	0.5	0.6	0.7	1.4	26.1	52
R11	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.2	25.5	51	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.2	25.5	51
R12	0.1	0.1	<0.1	0.2	0.1	0.2	0.4	25.6	51	0.1	0.1	<0.1	0.2	0.1	0.2	0.4	25.6	51
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51
R15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	25.5	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	25.5	51
R16	<0.1	0.1	0.1	<0.1	<0.1	0.1	0.3	25.6	51	<0.1	0.1	0.1	<0.1	<0.1	0.1	0.3	25.6	51
R17	0.5	0.5	0.6	0.5	0.5	0.6	1.3	26	52	0.6	0.5	0.6	0.4	0.5	0.6	1.3	26	52
R18	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.2	25.5	51	0.1	<0.1	<0.1	0.1	0.1	0.1	0.2	25.5	51
R19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51
R20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51
R21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51
R22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	25.5	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	25.5	51
R23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	25.5	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	25.5	51
R24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.4	51

Table 8A.26: Predicted future baseline annual mean $PM_{2.5}$ concentrations at discrete receptors (µg/m^3)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	11.7	47
R10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	11.7	47
R11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	11.7	47
R18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47
R24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.7	47

Modelling Results for SO_2

8.6.10 The CDC to annual mean and short term SO_2 concentrations at discrete receptors from the operation of the Consented Development is presented in Table 8A.27 to Table 8A.30.

8.6.11 The maximum predicted CDC to the annual mean SO_2 concentrations at the selected discrete receptors is 0.2µg/m^3 at R10 with the 10.5MJ/kg fuel. The maximum predicted CDCs to short-term SO_2 concentrations at the selected discrete receptors are of less than 10% of the AQAL.

8.6.12 The modelling results show that predicted concentrations are below the respective AQAL for SO_2.

Table 8A.27: Predicted future baseline annual mean SO_2 concentrations at discrete receptors (µg/m^3)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	3.9	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	3.9	8
R3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	4	8	0.2	0.2	0.2	0.1	0.1	0.2	0.4	4	8
R4	0.1	<0.1	0.1	<0.1	<0.1	0.1	0.2	3.9	8	0.1	<0.1	0.1	<0.1	<0.1	0.1	0.2	3.9	8
R5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8	8
R6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8	8
R8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8	8
R9	0.2	0.2	0.2	0.2	0.2	0.2	0.4	4	8	0.2	0.2	0.2	0.2	0.2	0.2	0.4	4	8
R10	0.2	0.2	0.3	0.2	0.2	0.3	0.5	4	8	0.2	0.2	0.3	0.2	0.2	0.3	0.5	4	8
R11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8	8
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R17	0.2	0.2	0.2	0.2	0.2	0.2	0.5	4	8	0.2	0.2	0.2	0.2	0.2	0.2	0.5	4	8
R18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8
R24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	8

Table 8A.28: Predicted future baseline 99.90th percentile of the 15 minute mean SO_2 concentrations at discrete receptors (µg/m^3)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	5.5	7.1	6.1	7.9	5.5	7.9	3	15.4	6	5.3	6.8	5.9	7.5	5.2	7.5	2.8	15	6
R2	18	16.4	14.1	14.7	15	18	6.8	25.5	10	17.5	16.6	14.1	14.8	14.4	17.5	6.6	25	9
R3	21.8	21.3	20.8	20.6	20.8	21.8	8.2	29.3	11	21.8	21.4	21.1	20.6	21.1	21.8	8.2	29.3	11
R4	19.2	19.1	19.2	18.5	18.8	19.2	7.2	26.8	10	19.6	19.4	19.5	18.8	19.1	19.6	7.4	27.1	10
R5	18.2	15.7	18.7	20.1	17.3	20.1	7.5	27.6	10	18.3	15.4	18.6	20.2	17.1	20.2	7.6	27.8	10
R6	19.2	19.1	19.8	20.2	21.2	21.2	8	28.7	11	19.3	19.2	20	20.5	21	21	7.9	28.5	11
R7	14.8	16.2	17.7	14.9	15	17.7	6.6	25.2	9	15.1	16.5	17.8	15.1	15.3	17.8	6.7	25.3	10

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R8	14.7	15.2	20	12.9	14.3	20	7.5	27.5	10	15.1	15.5	19.9	13.2	14.6	19.9	7.5	27.4	10
R9	16.8	16.8	16.8	17.1	16.5	17.1	6.4	24.6	9	17.2	17.2	17.1	17.5	16.9	17.5	6.6	25	9
R10	20.4	20.5	20.9	20.3	20.8	20.9	7.9	28.4	11	20.8	20.8	21.3	20.7	21.1	21.3	8	28.8	11
R11	21.7	21.2	20.6	20.4	20	21.7	8.2	29.3	11	21.9	21.7	20.9	20.8	20.6	21.9	8.2	29.4	11
R12	20.7	21	19.8	20.3	20.5	21	7.9	28.5	11	21.1	21.4	20.1	20.7	20.9	21.4	8	28.9	11
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	3
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	3
R15	10.9	10.7	11.2	8.9	7	11.2	4.2	18.7	7	10.7	10.5	10.8	8.6	6.8	10.8	4.1	18.3	7
R16	11.9	12.3	15.9	14.7	17	17	6.4	24.5	9	12.1	12.5	16	14.9	17.4	17.4	6.6	24.9	9
R17	19.8	19.7	19.5	19.4	19.6	19.8	7.4	27.3	10	20.3	20.1	20	19.8	20.1	20.3	7.6	27.8	10
R18	11.6	10.3	10.5	12.3	9.1	12.3	4.6	19.8	7	12	10.7	10.9	12.8	9.3	12.8	4.8	20.3	8
R19	0.4	0.3	0.5	1.5	0.7	1.5	0.6	9	3	0.4	0.3	0.4	1.4	0.6	1.4	0.5	8.9	3
R20	1.9	2.9	2.1	1.8	1.9	2.9	1.1	10.4	4	1.8	2.8	2	2	1.8	2.8	1.1	10.3	4
R21	1	2.4	1.7	1.5	0.7	2.4	0.9	9.9	4	0.9	2.2	1.5	1.4	0.6	2.2	0.8	9.7	4
R22	13	13.5	12.2	10.5	8.8	13.5	5.1	21.1	8	12.8	13.1	12	10.2	8.6	13.1	4.9	20.7	8
R23	12.8	13.7	12.1	16.2	13.2	16.2	6.1	23.7	9	12.8	13.5	12	16.1	13	16.1	6	23.6	9
R24	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	7.7	3	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	7.7	3

Table 8A.29: Predicted future baseline in 99.73th percentile of the 1h mean SO_2 concentrations at discrete receptors (µg/m³)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	2.7	2.9	2.3	3.9	1.6	3.9	1.1	11.4	3	2.6	2.9	2.2	3.5	1.5	3.5	1	11.1	3
R2	13.9	13.3	11.5	11.4	11.8	13.9	4	21.4	6	13.9	13	11.2	11.2	11.6	13.9	4	21.4	6
R3	19.6	18.6	18.7	18.6	18.5	19.6	5.6	27.2	8	19.8	18.8	18.9	18.7	18.4	19.8	5.7	27.3	8
R4	17.2	16.9	16.8	15.6	16.2	17.2	4.9	24.7	7	17.5	17	17	16	16.4	17.5	5	25	7
R5	12.8	11	10.9	15.6	12.4	15.6	4.5	23.1	7	12.8	11	10.8	15.5	12.2	15.5	4.4	23	7
R6	13.6	14.9	14.4	15.6	16.4	16.4	4.7	24	7	13.5	14.9	14.2	15.4	16.3	16.3	4.7	23.8	7
R7	12.4	11.9	12.8	11.8	12.1	12.8	3.6	20.3	6	12.7	12.1	12.9	12.1	12.3	12.9	3.7	20.4	6
R8	9.2	9.1	9.9	8.9	9.3	9.9	2.8	17.5	5	9.4	9.4	10.1	9	9.5	10.1	2.9	17.7	5
R9	14.2	14.3	14.3	14.3	14.3	14.3	4.1	21.9	6	14.5	14.6	14.7	14.7	14.6	14.7	4.2	22.2	6
R10	18.3	18.3	18.6	18.2	18.5	18.6	5.3	26.1	7	18.7	18.7	18.9	18.6	18.9	18.9	5.4	26.4	8
R11	17.4	16.3	15	15.8	16.5	17.4	5	24.9	7	17.4	16.5	15.1	15.8	16.7	17.4	5	24.9	7
R12	18.2	17.6	17.1	17.6	17.5	18.2	5.2	25.7	7	18.4	17.8	17.4	17.9	17.6	18.4	5.3	25.9	7
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	2
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	2
R15	7.2	7.5	6.7	5.2	5.1	7.5	2.1	15	4	7	7.1	6.5	5.1	4.9	7.1	2	14.7	4
R16	9.1	9.7	10.1	9.7	10.1	10.1	2.9	17.6	5	9.3	9.9	10.3	9.9	10.3	10.3	2.9	17.8	5
R17	17.3	17.3	17.3	17.2	17.3	17.3	5	24.9	7	17.8	17.7	17.7	17.6	17.7	17.8	5.1	25.3	7

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R18	5.7	5.5	5.5	5.9	6	6	1.7	13.5	4	5.8	5.6	5.6	6.1	6.2	6.2	1.8	13.7	4
R19	0.2	0.1	0.1	0.4	0.2	0.4	0.1	8	2	0.2	0.1	0.1	0.4	0.2	0.4	0.1	8	2
R20	0.7	1	1	0.6	0.5	1	0.3	8.5	2	0.7	0.9	0.9	0.8	0.5	0.9	0.3	8.5	2
R21	0.5	0.7	0.7	0.4	0.3	0.7	0.2	8.2	2	0.4	0.7	0.6	0.4	0.2	0.7	0.2	8.2	2
R22	9	9.2	8.3	6.7	6	9.2	2.6	16.8	5	8.8	9	8	6.5	5.9	9	2.6	16.5	5
R23	7.7	8.1	7.9	10.5	8.2	10.5	3	18	5	7.5	7.8	7.8	10.4	8.2	10.4	3	17.9	5
R24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	2

Table 8A.30: Predicted future baseline 99.18th percentile of the 24h mean SO_2 concentrations at discrete receptors (µg/m^3)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	0.6	0.7	0.9	0.7	0.8	0.9	0.7	8.4	7	0.6	0.7	0.8	0.7	0.7	0.8	0.7	8.4	7
R2	5.3	3.5	2.9	2.6	3.5	5.3	4.2	12.8	10	5.1	3.4	2.8	2.5	3.5	5.1	4.1	12.7	10
R3	7.9	7.6	10.5	10.4	7.7	10.5	8.4	18	14	7.9	7.6	10.4	10.3	7.7	10.4	8.3	17.9	14
R4	4.9	4	4.5	4.2	5.3	5.3	4.3	12.8	10	5	4	4.5	4.2	5.4	5.4	4.3	12.9	10
R5	2.9	2.3	3.3	3.7	2.8	3.7	3	11.2	9	2.9	2.3	3.3	3.7	2.8	3.7	3	11.2	9

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R6	2.6	3.6	3.6	3.3	3.2	3.6	2.9	11.1	9	2.6	3.7	3.6	3.3	3.3	3.7	2.9	11.2	9
R7	3.7	3.3	2.8	2.6	3.1	3.7	2.9	11.2	9	3.8	3.4	2.9	2.6	3.1	3.8	3	11.3	9
R8	2.8	2.3	2.3	2.1	2.3	2.8	2.2	10.3	8	2.8	2.3	2.4	2.2	2.3	2.8	2.2	10.3	8
R9	6.8	5.3	7.5	6.8	7.2	7.5	6	15	12	6.9	5.5	7.6	6.9	7.4	7.6	6.1	15.1	12
R10	9.6	8.3	10.9	9.4	7.9	10.9	8.7	18.4	15	9.9	8.5	11	9.6	7.9	11	8.8	18.6	15
R11	3.9	3.5	3.5	5.4	4	5.4	4.3	12.9	10	3.9	3.4	3.6	5.5	4	5.5	4.4	13	10
R12	5.3	5	5.6	5.8	6.1	6.1	4.9	13.6	11	5.4	5	5.6	5.8	6.2	6.2	4.9	13.7	11
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	6
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.5	6
R15	1.6	1.3	1.3	1	1	1.6	1.3	9.2	7	1.5	1.3	1.2	0.9	0.9	1.5	1.2	9	7
R16	2.4	1.9	2.2	1.9	2	2.4	1.9	9.9	8	2.5	2	2.3	1.9	2	2.5	2	10	8
R17	8.4	7.5	7.7	8.2	6.7	8.4	6.7	15.9	13	8.6	7.7	7.9	8.3	6.8	8.6	6.9	16.2	13
R18	1.8	1.4	1.7	1.6	1.5	1.8	1.4	9.3	7	1.8	1.4	1.8	1.7	1.5	1.8	1.5	9.4	7
R19	<0.1	<0.1	<0.1	0.2	0.1	0.2	0.2	7.7	6	<0.1	<0.1	<0.1	0.2	0.1	0.2	0.2	7.7	6
R20	0.2	0.3	0.3	0.3	0.3	0.3	0.3	7.9	6	0.2	0.3	0.2	0.3	0.3	0.3	0.3	7.8	6
R21	0.2	0.3	0.2	0.1	0.1	0.3	0.2	7.8	6	0.2	0.2	0.2	0.1	0.1	0.2	0.2	7.8	6
R22	2.2	1.5	1.6	1.4	1.5	2.2	1.7	9.7	8	2.2	1.4	1.5	1.3	1.5	2.2	1.7	9.7	8
R23	1.8	1.7	1.6	2	1.9	2	1.6	9.5	8	1.8	1.7	1.6	1.9	1.8	1.9	1.6	9.5	8
R24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.6	6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.6	6

Modelling Results for CO

8.6.13 The CDC to CO concentrations at discrete receptors from the operation of the Consented Development is presented in Table 8A.31 and Table 8A.32.

8.6.14 The maximum predicted CDC to the 8h running CO concentrations at the selected discrete receptors is 13.5µg/m^3 at R3. The maximum predicted CDC in 1h mean CO concentrations at the selected discrete receptors is 20.7µg/m^3 at R15.

8.6.15 The modelling results show that predicted concentrations are below the respective AQAL for CO.

Table 8A.31: Predicted future baseline maximum 8h running mean CO concentrations at discrete receptors (µg/m^3)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	2.2	4.3	2.7	2.4	2.5	4.3	<0.1	133.3	1	2.1	4.1	2.6	2.3	2.4	4.1	<0.1	133.1	1
R2	9.3	10.7	6	5.3	8.4	10.7	0.1	139.7	1	9.1	10.6	5.6	5.2	8.2	10.6	0.1	139.6	1
R3	11.8	11.5	13.2	13.1	13.5	13.5	0.1	142.5	1	11.9	11.6	13.4	13.4	13.5	13.5	0.1	142.5	1
R4	10.1	9.9	8.9	9	10	10.1	0.1	139.1	1	10.3	10	9	9.2	10.2	10.3	0.1	139.3	1
R5	7.3	6.4	7.1	8.9	8.7	8.9	<0.1	137.9	1	7.3	6.4	7.1	8.9	8.6	8.9	<0.1	137.9	1
R6	8	10.4	8	10.8	8.4	10.8	0.1	139.8	1	8	10.4	8.1	10.8	8.4	10.8	0.1	139.8	1
R7	7.3	6.9	6.2	6.1	8.4	8.4	<0.1	137.4	1	7.4	7	6.3	6.1	8.7	8.7	<0.1	137.7	1
R8	5.1	4.9	4.4	5.5	6.9	6.9	<0.1	135.9	1	5.3	4.9	4.5	5.4	7	7	<0.1	136	1
R9	8.5	9.1	9.3	9.2	8.9	9.3	<0.1	138.3	1	8.7	9.3	9.6	9.4	9.2	9.6	<0.1	138.6	1
R10	11.6	12.8	11.8	11	11.8	12.8	0.1	141.8	1	11.9	13.1	12.1	11.2	12	13.1	0.1	142.1	1
R11	10	11.3	11.7	11.1	11.2	11.7	0.1	140.7	1	10.1	11.4	11.9	11.2	11.2	11.9	0.1	140.9	1
R12	10.9	10.4	10.3	12.6	11.8	12.6	0.1	141.6	1	11.1	10.5	10.5	12.8	11.9	12.8	0.1	141.8	1
R13	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	129.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	129.1	1
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	129	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	129	1
R15	6.3	4.6	4.4	3	3.6	6.3	<0.1	135.3	1	6.2	4.5	4.3	2.9	3.5	6.2	<0.1	135.2	1
R16	5.1	4.5	5.3	4.3	5.3	5.3	<0.1	134.3	1	5.2	4.6	5.5	4.3	5.3	5.5	<0.1	134.5	1
R17	10.4	11.8	10.6	10.3	12	12	0.1	141	1	10.6	12.1	10.8	10.5	12.3	12.3	0.1	141.3	1
R18	3.5	4.3	3.1	3.3	3.1	4.3	<0.1	133.3	1	3.6	4.4	3.1	3.4	3.2	4.4	<0.1	133.4	1

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R19	0.6	0.6	0.2	1.8	0.5	1.8	<0.1	130.8	1	0.5	0.5	0.2	1.7	0.4	1.7	<0.1	130.7	1
R20	2.3	1.8	0.6	1.7	1.1	2.3	<0.1	131.3	1	2.2	1.7	0.6	1.6	1	2.2	<0.1	131.2	1
R21	2.7	0.8	0.6	2.3	0.5	2.7	<0.1	131.7	1	2.6	0.7	0.5	2.2	0.4	2.6	<0.1	131.6	1
R22	6.8	5.2	4.8	3.8	5.2	6.8	<0.1	135.8	1	6.8	5.1	4.8	3.7	5.1	6.8	<0.1	135.8	1
R23	6.1	6.4	3.7	8.7	5.5	8.7	<0.1	137.7	1	6	6.3	3.6	8.7	5.4	8.7	<0.1	137.7	1
R24	0.4	<0.1	0.2	0.1	0.2	0.4	<0.1	129.4	1	0.4	<0.1	0.2	<0.1	0.2	0.4	<0.1	129.4	1

Table 8A.32: Predicted future baseline maximum 1h mean CO concentrations at discrete receptors (µg/m^3)

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	8.5	12	15.4	12.4	13.3	15.4	<0.1	273.4	1	8.3	11.6	15.2	12.1	12.9	15.2	<0.1	273.2	1
R2	17.1	17.6	16.1	16.5	16.8	17.6	<0.1	275.6	1	17.1	17.5	16	16.4	16.7	17.5	<0.1	275.5	1
R3	17.4	16.9	17.3	15.6	16.4	17.4	<0.1	275.4	1	17.5	17	17.2	15.7	16.8	17.5	<0.1	275.5	1
R4	14	13.6	13.7	14	13.5	14	<0.1	272	1	14.3	13.8	14	14.3	13.7	14.3	<0.1	272.3	1
R5	17.3	17.1	15.2	17.9	15.1	17.9	<0.1	275.9	1	17.5	17.2	15.3	18.1	15.3	18.1	<0.1	276.1	1
R6	16.4	15.8	14.8	16.3	15.8	16.4	<0.1	274.4	1	16.5	16.2	15.2	16.5	16.2	16.5	<0.1	274.5	1
R7	13.8	15	16.4	14.6	12.5	16.4	<0.1	274.4	1	13.8	15.7	16.5	14.8	12.7	16.5	<0.1	274.5	1

RECEPTOR	12 MJ/kg Scenario									10.5 MJ/kg Scenario								
	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Met year 2015	Met year 2016	Met year 2017	Met year 2018	Met year 2019	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R8	11.8	14.4	14.4	13.3	11.9	14.4	<0.1	272.4	1	11.8	15.2	14.8	13.5	12	15.2	<0.1	273.2	1
R9	13.7	11.9	15.8	13.5	11.9	15.8	<0.1	273.8	1	13.9	12.2	15.8	13.7	12	15.8	<0.1	273.8	1
R10	14.5	14.8	14.8	16.3	14.9	16.3	<0.1	274.3	1	14.8	15.2	15.1	16.6	15.2	16.6	<0.1	274.6	1
R11	16.3	15.7	15.7	15.4	15.3	16.3	<0.1	274.3	1	16.7	15.9	15.9	15.7	15.6	16.7	<0.1	274.7	1
R12	15.1	15.1	15.1	15.6	15.3	15.6	<0.1	273.6	1	15.4	15.4	15.3	15.8	15.6	15.8	<0.1	273.8	1
R13	0.5	0.7	0.3	0.2	0.1	0.7	<0.1	258.7	1	0.4	0.6	0.2	0.1	0.1	0.6	<0.1	258.6	1
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	258.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	258	1
R15	20.7	14.6	14	16.2	10.8	20.7	<0.1	278.7	1	20.7	14.3	13.7	15.9	10.4	20.7	<0.1	278.7	1
R16	13.9	14.1	15.5	12.4	14.4	15.5	<0.1	273.5	1	14	14.5	15.7	12.6	14	15.7	<0.1	273.7	1
R17	14.8	14.2	13.7	14.8	13.5	14.8	<0.1	272.8	1	15	14.5	14.1	15.6	13.8	15.6	<0.1	273.6	1
R18	11.1	10	11.4	11.2	12.6	12.6	<0.1	270.6	1	11.2	10.4	11.5	11.4	12.6	12.6	<0.1	270.6	1
R19	2.8	3.8	1.2	6.7	3.3	6.7	<0.1	264.7	1	2.7	3.5	1.2	6.4	3.1	6.4	<0.1	264.4	1
R20	10.3	11.5	2.8	11.9	4.1	11.9	<0.1	269.9	1	9.9	11	2.6	11.4	3.7	11.4	<0.1	269.4	1
R21	9.1	4.1	4.4	13.3	3.4	13.3	<0.1	271.3	1	8.8	3.8	4.2	12.8	3.2	12.8	<0.1	270.8	1
R22	18.9	14.6	15.1	17.2	9.9	18.9	<0.1	276.9	1	18.9	14.4	14.9	17	9.7	18.9	<0.1	276.9	1
R23	14.5	14.4	14.7	19.7	13	19.7	<0.1	277.7	1	14.5	14.3	14.5	19.7	12.8	19.7	<0.1	277.7	1
R24	3.1	0.5	1.2	0.7	1.1	3.1	<0.1	261.1	1	2.9	0.4	1.2	0.6	1	2.9	<0.1	260.9	1

Modelling Results for all other pollutants from the stack (for the Protection of Human Health)

8.6.16 The maximum CDC and predicted future baseline (Total) within the modelled domain, for each pollutant and averaging period, are summarised in Table 8A.33 to Table 8A.46. In these tables, it is assumed that Group 3 metals are emitted at 100% of the BAT-AEL (i.e., 0.3mg/m^3) which is considered to be a worst-case scenario.

8.6.17 The CDC listed, in respect of each pollutant and averaging period assessed, is the maximum impact reported from the modelling of five years of meteorological data. The background values used in the calculation of total concentrations are as described in Table 8A.1.

8.6.18 The results show that the maximum CDC and total values for most of the modelled pollutants are well within their respective AQAL criteria for the protection of human health. The exceptions are:

- PAH (as B[a]P);
- arsenic; and
- chromium (VI).

8.6.19 Therefore, the concentrations of these substances have undergone additional consideration, in accordance with EA Group 3 metal stack emission guidance. Use has been made of additional information on emissions of B[a]P from other facilities in the UK in the assessment as set out in the following sections of this ES Report.

Table 8A.33: Maximum future baseline concentrations, VOC and HCl, for the worst-case meteorological data year

	Annual Mean VOC (as Benzene)								Maximum 1h mean HCl							
RECEPTORS	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.01	0.04	0.78	15.6	<0.01	0.04	0.78	15.6	6.16	0.82	6.56	0.88	6.07	0.8	6.47	0.9
R2	0.02	0.49	0.8	16.1	0.02	0.47	0.8	16.1	7.05	0.94	7.45	0.99	6.99	0.9	7.39	1
R3	0.05	1.02	0.83	16.6	0.05	1	0.83	16.6	6.96	0.93	7.36	0.98	6.99	0.9	7.39	1
R4	0.03	0.54	0.81	16.1	0.03	0.54	0.81	16.1	5.59	0.75	5.99	0.8	5.72	0.8	6.12	0.8
R5	0.01	0.26	0.79	15.8	0.01	0.26	0.79	15.8	7.15	0.95	7.55	1.01	7.22	1	7.62	1
R6	<0.01	0.2	0.79	15.8	<0.01	0.19	0.79	15.8	6.55	0.87	6.95	0.93	6.58	0.9	6.98	0.9
R7	0.01	0.3	0.79	15.9	0.02	0.3	0.79	15.9	6.56	0.87	6.96	0.93	6.59	0.9	6.99	0.9
R8	0.01	0.27	0.79	15.9	0.01	0.28	0.79	15.9	5.78	0.77	6.18	0.82	6.07	0.8	6.47	0.9
R9	0.05	1.04	0.83	16.6	0.05	1.05	0.83	16.6	6.32	0.84	6.72	0.9	6.3	0.8	6.7	0.9
R10	0.07	1.36	0.85	16.9	0.07	1.37	0.85	16.9	6.53	0.87	6.93	0.92	6.63	0.9	7.03	0.9
R11	0.01	0.24	0.79	15.8	0.01	0.24	0.79	15.8	6.53	0.87	6.93	0.92	6.66	0.9	7.06	0.9
R12	0.02	0.32	0.79	15.9	0.02	0.32	0.79	15.9	6.22	0.83	6.62	0.88	6.3	0.8	6.7	0.9
R13	<0.01	<0.01	0.78	15.6	<0.01	<0.01	0.78	15.6	0.29	0.04	0.69	0.09	0.26	<0.1	0.66	0.1

RECEPTORS	Annual Mean VOC (as Benzene)								Maximum 1h mean HCl							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R14	<0.01	<0.01	0.78	15.6	<0.01	<0.01	0.78	15.6	0.02	<0.01	0.42	0.06	0.02	<0.1	0.42	0.1
R15	<0.01	0.12	0.79	15.7	<0.01	0.12	0.78	15.7	8.27	1.1	8.67	1.16	8.25	1.1	8.65	1.2
R16	0.01	0.21	0.79	15.8	0.01	0.22	0.79	15.8	6.22	0.83	6.62	0.88	6.28	0.8	6.68	0.9
R17	0.06	1.21	0.84	16.8	0.06	1.22	0.84	16.8	5.91	0.79	6.31	0.84	6.25	0.8	6.65	0.9
R18	0.01	0.21	0.79	15.8	0.01	0.21	0.79	15.8	5.03	0.67	5.43	0.72	5.05	0.7	5.45	0.7
R19	<0.01	<0.01	0.78	15.6	<0.01	<0.01	0.78	15.6	2.67	0.36	3.07	0.41	2.56	0.3	2.96	0.4
R20	<0.01	0.01	0.78	15.6	<0.01	0.01	0.78	15.6	4.76	0.63	5.16	0.69	4.58	0.6	4.98	0.7
R21	<0.01	<0.01	0.78	15.6	<0.01	<0.01	0.78	15.6	5.32	0.71	5.72	0.76	5.11	0.7	5.51	0.7
R22	<0.01	0.14	0.79	15.7	<0.01	0.14	0.79	15.7	7.56	1.01	7.96	1.06	7.56	1	7.96	1.1
R23	<0.01	0.13	0.79	15.7	<0.01	0.13	0.79	15.7	7.87	1.05	8.27	1.1	7.88	1.1	8.28	1.1
R24	<0.01	<0.01	0.78	15.6	<0.01	<0.01	0.78	15.6	1.26	0.17	1.66	0.22	1.15	0.2	1.55	0.2

Table 8A.34: Maximum future baseline concentrations, Pb and Cd, for the worst-case meteorological data year

	Annual Mean Pb								Annual Mean Cd							
RECEPTORS	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.01	0.02	<0.01	3.6	<0.01	0.02	<0.01	3.6	<0.01	0.07	<0.01	3.1	<0.01	0.07	<0.01	3.1
R2	<0.01	0.29	<0.01	3.8	<0.01	0.3	<0.01	3.8	<0.01	0.98	<0.01	4	<0.01	0.94	<0.01	3.9
R3	<0.01	0.6	0.01	4.1	<0.01	0.63	0.01	4.2	<0.01	2.04	<0.01	5	<0.01	2.01	<0.01	5
R4	<0.01	0.32	<0.01	3.9	<0.01	0.34	<0.01	3.9	<0.01	1.08	<0.01	4.1	<0.01	1.09	<0.01	4.1
R5	<0.01	0.16	<0.01	3.7	<0.01	0.16	<0.01	3.7	<0.01	0.53	<0.01	3.5	<0.01	0.52	<0.01	3.5
R6	<0.01	0.12	<0.01	3.7	<0.01	0.12	<0.01	3.7	<0.01	0.39	<0.01	3.4	<0.01	0.39	<0.01	3.4
R7	<0.01	0.18	<0.01	3.7	<0.01	0.19	<0.01	3.7	<0.01	0.6	<0.01	3.6	<0.01	0.6	<0.01	3.6
R8	<0.01	0.16	<0.01	3.7	<0.01	0.17	<0.01	3.7	<0.01	0.55	<0.01	3.5	<0.01	0.55	<0.01	3.6

RECEPTORS	Annual Mean Pb								Annual Mean Cd							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R9	<0.01	0.62	0.01	4.2	<0.01	0.66	0.01	4.2	<0.01	2.08	<0.01	5.1	<0.01	2.11	<0.01	5.1
R10	<0.01	0.81	0.01	4.3	<0.01	0.86	0.01	4.4	<0.01	2.72	<0.01	5.7	<0.01	2.74	<0.01	5.7
R11	<0.01	0.14	<0.01	3.7	<0.01	0.15	<0.01	3.7	<0.01	0.48	<0.01	3.5	<0.01	0.47	<0.01	3.5
R12	<0.01	0.19	<0.01	3.7	<0.01	0.2	<0.01	3.7	<0.01	0.63	<0.01	3.6	<0.01	0.63	<0.01	3.6
R13	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
R14	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
R15	<0.01	0.07	<0.01	3.6	<0.01	0.07	<0.01	3.6	<0.01	0.24	<0.01	3.2	<0.01	0.24	<0.01	3.2
R16	<0.01	0.13	<0.01	3.7	<0.01	0.14	<0.01	3.7	<0.01	0.43	<0.01	3.4	<0.01	0.43	<0.01	3.4
R17	<0.01	0.72	0.01	4.3	<0.01	0.77	0.01	4.3	<0.01	2.41	<0.01	5.4	<0.01	2.44	<0.01	5.4
R18	<0.01	0.12	<0.01	3.7	<0.01	0.13	<0.01	3.7	<0.01	0.41	<0.01	3.4	<0.01	0.42	<0.01	3.4

	Annual Mean Pb								Annual Mean Cd							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R19	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3.5	<0.01	0.01	<0.01	3	<0.01	0.01	<0.01	3
R20	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3.5	<0.01	0.03	<0.01	3	<0.01	0.02	<0.01	3
R21	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3.5	<0.01	0.02	<0.01	3	<0.01	0.01	<0.01	3
R22	<0.01	0.09	<0.01	3.6	<0.01	0.09	<0.01	3.6	<0.01	0.29	<0.01	3.3	<0.01	0.28	<0.01	3.3
R23	<0.01	0.08	<0.01	3.6	<0.01	0.08	<0.01	3.6	<0.01	0.27	<0.01	3.3	<0.01	0.26	<0.01	3.3
R24	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3.5	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3

Table 8A.35: Maximum future baseline concentrations, Hg, for the worst-case meteorological data year

	Annual Mean Hg								Maximum 1h mean Hg							
RECEPTORS	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R2	<0.01	0.02	<0.01	0.8	<0.01	0.02	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R3	<0.01	0.04	<0.01	0.8	<0.01	0.04	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R4	<0.01	0.02	<0.01	0.8	<0.01	0.02	<0.01	0.8	<0.01	0.02	<0.01	0.1	<0.01	0.03	<0.01	0.1
R5	<0.01	0.01	<0.01	0.8	<0.01	0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R6	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R7	<0.01	0.01	<0.01	0.8	<0.01	0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R8	<0.01	0.01	<0.01	0.8	<0.01	0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R9	<0.01	0.04	<0.01	0.8	<0.01	0.04	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1

	Annual Mean Hg								Maximum 1h mean Hg							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R10	<0.01	0.05	<0.01	0.9	<0.01	0.05	<0.01	0.9	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R11	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R12	<0.01	0.01	<0.01	0.8	<0.01	0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R13	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1
R14	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1
R15	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.04	<0.01	0.1	<0.01	0.04	<0.01	0.1
R16	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R17	<0.01	0.05	<0.01	0.8	<0.01	0.05	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R18	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.02	<0.01	0.1	<0.01	0.02	<0.01	0.1
R19	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.01	<0.01	0.1	<0.01	0.01	<0.01	0.1

	Annual Mean Hg								Maximum 1h mean Hg							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R20	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.02	<0.01	0.1	<0.01	0.02	<0.01	0.1
R21	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.02	<0.01	0.1	<0.01	0.02	<0.01	0.1
R22	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.03	<0.01	0.1
R23	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	0.03	<0.01	0.1	<0.01	0.04	<0.01	0.1
R24	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.8	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1

Table 8A.36: Maximum future baseline concentrations, Sb, for the worst-case meteorological data year

	Annual Mean Sb								Maximum 1h Mean Sb							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R1	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02
R2	<0.01	0.01	<0.01	0.03	<0.01	0.01	<0.01	0.03	0.03	0.02	0.04	0.02	0.04	0.02	0.04	0.03
R3	<0.01	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	0.03	0.02	0.04	0.02	0.04	0.02	0.04	0.03
R4	<0.01	0.02	<0.01	0.03	<0.01	0.02	<0.01	0.03	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02
R5	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.04	0.02	0.04	0.02	0.04	0.03	0.04	0.03
R6	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.04	0.02
R7	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.03	0.03	0.02	0.03	0.02	0.03	0.02	0.04	0.02
R8	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02
R9	<0.01	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02

RECEPTORS	Annual Mean Sb								Maximum 1h Mean Sb							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R10	<0.01	0.04	<0.01	0.06	<0.01	0.04	<0.01	0.06	0.03	0.02	0.03	0.02	0.03	0.02	0.04	0.02
R11	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.04	0.02
R12	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.03	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02
R13	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R14	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R15	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.04	0.03	0.04	0.03	0.04	0.03	0.04	0.03
R16	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02
R17	<0.01	0.04	<0.01	0.05	<0.01	0.04	<0.01	0.05	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02
R18	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.03	0.02
R19	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01

	Annual Mean Sb								Maximum 1h Mean Sb							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R20	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.03	0.02
R21	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02
R22	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.04	0.02	0.04	0.03	0.04	0.03	0.04	0.03
R23	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.04	0.03	0.04	0.03	0.04	0.03	0.04	0.03
R24	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table 8A.37: Maximum concentrations, Total Cr, for the worst-case meteorological data year

RECEPTORS	Annual Mean Total Cr								Maximum 1h Mean Total Cr							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R2	<0.01	0.01	<0.01	0.11	<0.01	0.01	<0.01	0.11	0.03	0.02	0.04	0.03	0.04	0.02	0.05	0.03
R3	<0.01	0.03	<0.01	0.13	<0.01	0.03	<0.01	0.13	0.03	0.02	0.04	0.03	0.04	0.02	0.05	0.03
R4	<0.01	0.02	<0.01	0.11	<0.01	0.02	<0.01	0.12	0.03	0.02	0.04	0.02	0.03	0.02	0.04	0.03
R5	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.01	0.11	0.04	0.02	0.05	0.03	0.04	0.03	0.05	0.03
R6	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R7	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.01	0.11	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R8	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.01	0.11	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R9	<0.01	0.03	<0.01	0.13	<0.01	0.03	<0.01	0.13	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03

RECEPTORS	Annual Mean Total Cr								Maximum 1h Mean Total Cr							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R10	<0.01	0.04	<0.01	0.14	<0.01	0.04	<0.01	0.14	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R11	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.01	0.11	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R12	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.01	0.11	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R13	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01
R14	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R15	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	0.04	0.03	0.05	0.03	0.04	0.03	0.05	0.04
R16	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.11	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R17	<0.01	0.04	<0.01	0.13	<0.01	0.04	<0.01	0.14	0.03	0.02	0.04	0.03	0.03	0.02	0.04	0.03
R18	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.11	0.02	0.02	0.03	0.02	0.03	0.02	0.04	0.02

RECEPTORS	Annual Mean Total Cr								Maximum 1h Mean Total Cr							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R19	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	0.01	<0.01	0.02	0.02	0.01	<0.01	0.02	0.02
R20	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	0.02	0.02	0.03	0.02	0.02	0.02	0.03	0.02
R21	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	0.03	0.02	0.04	0.02	0.03	0.02	0.04	0.02
R22	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	0.04	0.02	0.05	0.03	0.04	0.03	0.05	0.03
R23	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	0.04	0.03	0.05	0.03	0.04	0.03	0.05	0.03
R24	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	0.02	0.01	<0.01	<0.01	0.02	0.01

Table 8A.38: Maximum concentrations, As and Cr (VI), for the worst-case meteorological data year

RECEPTORS	Annual Mean As								Annual Mean Cr (VI)							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	5.55x10-5	1.85	9.11x10-4	30.4	5.73x10-5	1.91	9.12x10-4	30.4	5.55x10-5	27.8	1.04x10-3	520.8	5.73x10-5	28.6	1.04x10-3	521.6
R2	7.26x10-4	24.19	1.58x10-3	52.7	7.42x10-4	24.73	1.60x10-3	53.2	7.26x10-4	362.8	1.71x10-3	855.8	7.42x10-4	371	1.73x10-3	864
R3	1.51x10-3	50.37	2.37x10-3	78.9	1.58x10-3	52.64	2.43x10-3	81.1	1.51x10-3	755.6	2.50x10-3	1248.6	1.58x10-3	789.6	2.57x10-3	1282.6
R4	8.04x10-4	26.81	1.66x10-3	55.3	8.53x10-4	28.45	1.71x10-3	56.9	8.04x10-4	402.1	1.79x10-3	895.1	8.53x10-4	426.7	1.84x10-3	919.7
R5	3.91x10-4	13.03	1.25x10-3	41.5	4.09x10-4	13.65	1.26x10-3	42.1	3.91x10-4	195.4	1.38x10-3	688.4	4.09x10-4	204.7	1.40x10-3	697.7
R6	2.92x10-4	9.73	1.15x10-3	38.2	3.03x10-4	10.12	1.16x10-3	38.6	2.92x10-4	145.9	1.28x10-3	638.9	3.03x10-4	151.7	1.29x10-3	644.7
R7	4.43x10-4	14.78	1.30x10-3	43.3	4.72x10-4	15.73	1.33x10-3	44.2	4.43x10-4	221.7	1.43x10-3	714.7	4.72x10-4	236	1.46x10-3	729
R8	4.05x10-4	13.5	1.26x10-3	42	4.34x10-4	14.45	1.29x10-3	43	4.05x10-4	202.5	1.39x10-3	695.5	4.34x10-4	216.8	1.42x10-3	709.8

RECEPTORS	Annual Mean As								Annual Mean Cr (VI)							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R9	1.54x10-3	51.49	2.40x10-3	80	1.65x10-3	55.14	2.51x10-3	83.6	1.54x10-3	772.3	2.53x10-3	1265.3	1.65x10-3	827.1	2.64x10-3	1320.1
R10	2.02x10-3	67.27	2.87x10-3	95.8	2.15x10-3	71.75	3.01x10-3	100.2	2.02x10-3	1009.1	3.00x10-3	1502.1	2.15x10-3	1076.2	3.14x10-3	1569.2
R11	3.54x10-4	11.82	1.21x10-3	40.3	3.72x10-4	12.4	1.23x10-3	40.9	3.54x10-4	177.2	1.34x10-3	670.2	3.72x10-4	185.9	1.36x10-3	678.9
R12	4.69x10-4	15.63	1.32x10-3	44.1	4.96x10-4	16.54	1.35x10-3	45	4.69x10-4	234.4	1.45x10-3	727.4	4.96x10-4	248.1	1.48x10-3	741.1
R13	3.54x10-7	0.01	8.55x10-4	28.5	3.32x10-7	0.01	8.55x10-4	28.5	3.54x10-7	0.2	9.86x10-4	493.2	3.32x10-7	0.2	9.86x10-4	493.2
R14	2.13x10-8	<0.01	8.55x10-4	28.5	1.96x10-8	<0.01	8.55x10-4	28.5	2.13x10-8	<0.1	9.86x10-4	493	1.96x10-8	<0.01	9.86x10-4	493
R15	1.81x10-4	6.03	1.04x10-3	34.5	1.86x10-4	6.19	1.04x10-3	34.7	1.81x10-4	90.4	1.17x10-3	583.4	1.86x10-4	92.8	1.17x10-3	585.8
R16	3.16x10-4	10.54	1.17x10-3	39	3.38x10-4	11.27	1.19x10-3	39.8	3.16x10-4	158.2	1.30x10-3	651.2	3.38x10-4	169	1.32x10-3	662
R17	1.79x10-3	59.68	2.65x10-3	88.2	1.91x10-3	63.79	2.77x10-3	92.3	1.79x10-3	895.2	2.78x10-3	1388.2	1.91x10-3	956.9	2.90x10-3	1449.9

RECEPTORS	Annual Mean As								Annual Mean Cr (VI)							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R18	3.08x10-4	10.25	1.16x10-3	38.8	3.32x10-4	11.06	1.19x10-3	39.6	3.08x10-4	153.8	1.29x10-3	646.8	3.32x10-4	165.8	1.32x10-3	658.8
R19	8.87x10-6	0.3	8.64x10-4	28.8	9.00x10-6	0.3	8.64x10-4	28.8	8.87x10-6	4.4	9.95x10-4	497.4	9.00x10-6	4.5	9.95x10-4	497.5
R20	1.91x10-5	0.64	8.74x10-4	29.1	1.90x10-5	0.63	8.74x10-4	29.1	1.91x10-5	9.5	1.01x10-3	502.5	1.90x10-5	9.5	1.00x10-3	502.5
R21	1.18x10-5	0.39	8.67x10-4	28.9	1.16x10-5	0.39	8.67x10-4	28.9	1.18x10-5	5.9	9.98x10-4	498.9	1.16x10-5	5.8	9.98x10-4	498.8
R22	2.13x10-4	7.1	1.07x10-3	35.6	2.20x10-4	7.34	1.08x10-3	35.8	2.13x10-4	106.6	1.20x10-3	599.6	2.20x10-4	110.1	1.21x10-3	603.1
R23	1.98x10-4	6.59	1.05x10-3	35.1	2.06x10-4	6.86	1.06x10-3	35.4	1.98x10-4	98.9	1.18x10-3	591.9	2.06x10-4	102.9	1.19x10-3	595.9
R24	1.59x10-6	0.05	8.57x10-4	28.6	1.59x10-6	0.05	8.57x10-4	28.6	1.59x10-6	0.8	9.88x10-4	493.8	1.59x10-6	0.8	9.88x10-4	493.8

Table 8A.39: Maximum concentrations, Cu, for the worst-case meteorological data year

	Annual Mean Cu								Maximum 1h Mean Cu							
RECEPTORS	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.04	0.35	0.03	0.02	0.1	0.05	0.03	0.02	0.1	0.05
R2	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.04	0.02	0.11	0.05	0.03	0.02	0.11	0.05
R3	<0.01	0.02	0.04	0.37	<0.01	0.02	0.04	0.37	0.03	0.02	0.11	0.05	0.03	0.02	0.11	0.05
R4	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.03	0.01	0.1	0.05	0.03	0.01	0.1	0.05
R5	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.04	0.02	0.11	0.05	0.04	0.02	0.11	0.05
R6	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.03	0.02	0.1	0.05	0.03	0.02	0.1	0.05
R7	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.03	0.02	0.1	0.05	0.03	0.02	0.1	0.05
R8	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.03	0.01	0.1	0.05	0.03	0.02	0.1	0.05
R9	<0.01	0.02	0.04	0.37	<0.01	0.02	0.04	0.37	0.03	0.02	0.1	0.05	0.03	0.02	0.1	0.05

RECEPTORS	Annual Mean Cu								Maximum 1h Mean Cu							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R10	<0.01	0.02	0.04	0.37	<0.01	0.02	0.04	0.37	0.03	0.02	0.1	0.05	0.03	0.02	0.1	0.05
R11	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.03	0.02	0.1	0.05	0.03	0.02	0.1	0.05
R12	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.03	0.02	0.1	0.05	0.03	0.02	0.1	0.05
R13	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.07	0.04	<0.01	<0.01	0.07	0.04
R14	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.07	0.04	<0.01	<0.01	0.07	0.04
R15	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.04	0.02	0.11	0.06	0.04	0.02	0.11	0.06
R16	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.03	0.02	0.1	0.05	0.03	0.02	0.1	0.05
R17	<0.01	0.02	0.04	0.37	<0.01	0.02	0.04	0.37	0.03	0.01	0.1	0.05	0.03	0.02	0.1	0.05
R18	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.03	0.01	0.1	0.05	0.03	0.01	0.1	0.05
R19	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.04	0.35	0.01	<0.01	0.08	0.04	0.01	<0.01	0.08	0.04

RECEPTORS	Annual Mean Cu								Maximum 1h Mean Cu							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R20	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.04	0.35	0.02	0.01	0.09	0.05	0.02	0.01	0.09	0.05
R21	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.04	0.35	0.03	0.01	0.1	0.05	0.03	0.01	0.1	0.05
R22	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.04	0.02	0.11	0.05	0.04	0.02	0.11	0.05
R23	<0.01	<0.01	0.04	0.36	<0.01	<0.01	0.04	0.36	0.04	0.02	0.11	0.06	0.04	0.02	0.11	0.06
R24	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.04	0.35	<0.01	<0.01	0.08	0.04	<0.01	<0.01	0.08	0.04

Table 8A.40: Maximum concentrations, Mn, for the worst-case meteorological data year

RECEPTORS	Annual Mean Mn								Maximum 1h Mean Mn							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.01	0.04	<0.01	5.9	<0.01	0.04	<0.01	5.9	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R2	<0.01	0.49	<0.01	6.3	<0.01	0.47	<0.01	6.3	0.04	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R3	<0.01	1.02	0.01	6.8	<0.01	1	0.01	6.8	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R4	<0.01	0.54	<0.01	6.4	<0.01	0.54	<0.01	6.4	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R5	<0.01	0.26	<0.01	6.1	<0.01	0.26	<0.01	6.1	0.04	<0.01	0.05	<0.01	0.04	<0.01	0.05	<0.01
R6	<0.01	0.2	<0.01	6	<0.01	0.19	<0.01	6	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R7	<0.01	0.3	<0.01	6.1	<0.01	0.3	<0.01	6.1	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R8	<0.01	0.27	<0.01	6.1	<0.01	0.28	<0.01	6.1	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R9	<0.01	1.04	0.01	6.9	<0.01	1.05	0.01	6.9	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01

RECEPTORS	Annual Mean Mn								Maximum 1h Mean Mn							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R10	<0.01	1.36	0.01	7.2	<0.01	1.37	0.01	7.2	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R11	<0.01	0.24	<0.01	6.1	<0.01	0.24	<0.01	6.1	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R12	<0.01	0.32	<0.01	6.1	<0.01	0.32	<0.01	6.1	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R13	<0.01	<0.01	<0.01	5.8	<0.01	<0.01	<0.01	5.8	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01
R14	<0.01	<0.01	<0.01	5.8	<0.01	<0.01	<0.01	5.8	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01
R15	<0.01	0.12	<0.01	5.9	<0.01	0.12	<0.01	5.9	0.04	<0.01	0.06	<0.01	0.04	<0.01	0.06	<0.01
R16	<0.01	0.21	<0.01	6	<0.01	0.22	<0.01	6	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R17	<0.01	1.21	0.01	7	<0.01	1.22	0.01	7	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	<0.01
R18	<0.01	0.21	<0.01	6	<0.01	0.21	<0.01	6	0.03	<0.01	0.04	<0.01	0.03	<0.01	0.04	<0.01
R19	<0.01	<0.01	<0.01	5.8	<0.01	<0.01	<0.01	5.8	0.01	<0.01	0.03	<0.01	0.01	<0.01	0.03	<0.01

	Annual Mean Mn								Maximum 1h Mean Mn							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R20	<0.01	0.01	<0.01	5.8	<0.01	0.01	<0.01	5.8	0.02	<0.01	0.04	<0.01	0.02	<0.01	0.04	<0.01
R21	<0.01	<0.01	<0.01	5.8	<0.01	<0.01	<0.01	5.8	0.03	<0.01	0.04	<0.01	0.03	<0.01	0.04	<0.01
R22	<0.01	0.14	<0.01	6	<0.01	0.14	<0.01	6	0.04	<0.01	0.06	<0.01	0.04	<0.01	0.06	<0.01
R23	<0.01	0.13	<0.01	6	<0.01	0.13	<0.01	6	0.04	<0.01	0.06	<0.01	0.04	<0.01	0.06	<0.01
R24	<0.01	<0.01	<0.01	5.8	<0.01	<0.01	<0.01	5.8	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01

Table 8A.41: Maximum concentrations, Ni and PAH, for the worst-case meteorological data year

RECEPTORS	Annual Mean Ni								Annual Mean PAH							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	5.62x 10-5	0.3	1.86x 10-3	9.3	5.47x 10-5	0.3	1.85x 10-3	9.3	1.85x10-6	0.7	8.25x10-4	329.9	1.91x10-6	0.8	8.25x10-4	330
R2	7.35x 10-4	3.7	2.54x 10-3	12.7	7.08x 10-4	3.5	2.51x 10-3	12.5	2.42x10-5	9.7	8.47x10-4	338.9	2.47x10-5	9.9	8.48x10-4	339.1
R3	1.53x 10-3	7.7	3.33x 10-3	16.7	1.51x 10-3	7.5	3.31x 10-3	16.5	5.04x10-5	20.1	8.73x10-4	349.3	5.26x10-5	21.1	8.76x10-4	350.3
R4	8.15x 10-4	4.1	2.61x 10-3	13.1	8.15x 10-4	4.1	2.61x 10-3	13.1	2.68x10-5	10.7	8.50x10-4	339.9	2.84x10-5	11.4	8.51x10-4	340.6
R5	3.96x 10-4	2	2.20x 10-3	11	3.91x 10-4	2	2.19x 10-3	11	1.30x10-5	5.2	8.36x10-4	334.4	1.36x10-5	5.5	8.37x10-4	334.7
R6	2.96x 10-4	1.5	2.10x 10-3	10.5	2.90x 10-4	1.4	2.09x 10-3	10.4	9.73x10-6	3.9	8.33x10-4	333.1	1.01x10-5	4	8.33x10-4	333.2
R7	4.49x 10-4	2.2	2.25x 10-3	11.2	4.51x 10-4	2.3	2.25x 10-3	11.3	1.48x10-5	5.9	8.38x10-4	335.1	1.57x10-5	6.3	8.39x10-4	335.5
R8	4.10x 10-4	2.1	2.21x 10-3	11.1	4.14x 10-4	2.1	2.21x 10-3	11.1	1.35x10-5	5.4	8.36x10-4	334.6	1.45x10-5	5.8	8.37x10-4	335

RECEPTORS	Annual Mean Ni								Annual Mean PAH							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R9	1.57x10-3	7.8	3.37x10-3	16.8	1.58x10-3	7.9	3.38x10-3	16.9	5.15x10-5	20.6	8.74x10-4	349.8	5.51x10-5	22.1	8.78x10-4	351.3
R10	2.05x10-3	10.2	3.85x10-3	19.2	2.05x10-3	10.3	3.85x10-3	19.3	6.73x10-5	26.9	8.90x10-4	356.1	7.17x10-5	28.7	8.95x10-4	357.9
R11	3.59x10-4	1.8	2.16x10-3	10.8	3.55x10-4	1.8	2.15x10-3	10.8	1.18x10-5	4.7	8.35x10-4	333.9	1.24x10-5	5	8.35x10-4	334.2
R12	4.75x10-4	2.4	2.28x10-3	11.4	4.74x10-4	2.4	2.27x10-3	11.4	1.56x10-5	6.3	8.39x10-4	335.5	1.65x10-5	6.6	8.40x10-4	335.8
R13	3.59x10-7	<0.01	1.80x10-3	9	3.17x10-7	<0.01	1.80x10-3	9	1.18x10-8	<0.01	8.23x10-4	329.2	1.11x10-8	0	8.23x10-4	329.2
R14	2.16x10-8	<0.01	1.80x10-3	9	1.87x10-8	<0.01	1.80x10-3	9	7.09e-10	<0.01	8.23x10-4	329.2	6.54e-10	0	8.23x10-4	329.2
R15	1.83x10-4	0.9	1.98x10-3	9.9	1.77x10-4	0.9	1.98x10-3	9.9	6.03x10-6	2.4	8.29x10-4	331.6	6.19x10-6	2.5	8.29x10-4	331.7
R16	3.21x10-4	1.6	2.12x10-3	10.6	3.23x10-4	1.6	2.12x10-3	10.6	1.05x10-5	4.2	8.34x10-4	333.4	1.13x10-5	4.5	8.34x10-4	333.7
R17	1.81x10-3	9.1	3.61x10-3	18.1	1.83x10-3	9.1	3.63x10-3	18.1	5.97x10-5	23.9	8.83x10-4	353.1	6.38x10-5	25.5	8.87x10-4	354.7

RECEPTORS	Annual Mean Ni								Annual Mean PAH							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R18	3.12x10-4	1.6	2.11x10-3	10.6	3.17x10-4	1.6	2.12x10-3	10.6	1.03x10-5	4.1	8.33x10-4	333.3	1.11x10-5	4.4	8.34x10-4	333.6
R19	8.99x10-6	0	1.81x10-3	9	8.59x10-6	0	1.81x10-3	9	2.96x10-7	0.1	8.23x10-4	329.3	3.00x10-7	0.1	8.23x10-4	329.3
R20	1.93x10-5	0.1	1.82x10-3	9.1	1.81x10-5	0.1	1.82x10-3	9.1	6.35x10-7	0.3	8.24x10-4	329.5	6.32x10-7	0.3	8.24x10-4	329.5
R21	1.20x10-5	0.1	1.81x10-3	9.1	1.11x10-5	0.1	1.81x10-3	9.1	3.93x10-7	0.2	8.23x10-4	329.4	3.87x10-7	0.2	8.23x10-4	329.4
R22	2.16x10-4	1.1	2.02x10-3	10.1	2.10x10-4	1.1	2.01x10-3	10.1	7.10x10-6	2.8	8.30x10-4	332	7.34x10-6	2.9	8.30x10-4	332.1
R23	2.00x10-4	1	2.00x10-3	10	1.96x10-4	1	2.00x10-3	10	6.59x10-6	2.6	8.30x10-4	331.8	6.86x10-6	2.7	8.30x10-4	331.9
R24	1.61x10-6	<0.01	1.80x10-3	9	1.52x10-6	<0.01	1.80x10-3	9	5.31x10-8	0	8.23x10-4	329.2	5.30x10-8	0	8.23x10-4	329.2

Table 8A.42: Maximum future baseline concentrations, V, for the worst-case meteorological data year

RECEPTORS	Annual Mean V								Maximum 1h Mean V							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.03	3.1	0.03	3.4	0.03	3	0.03	3.3
R2	<0.01	0.01	<0.01	0.04	<0.01	0.01	<0.01	0.04	0.04	3.5	0.04	3.8	0.03	3.5	0.04	3.8
R3	<0.01	0.03	<0.01	0.06	<0.01	0.03	<0.01	0.06	0.03	3.5	0.04	3.8	0.03	3.5	0.04	3.8
R4	<0.01	0.02	<0.01	0.05	<0.01	0.02	<0.01	0.05	0.03	2.8	0.03	3.1	0.03	2.9	0.03	3.2
R5	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.04	0.04	3.6	0.04	3.9	0.04	3.6	0.04	3.9
R6	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.04	0.03	3.3	0.04	3.6	0.03	3.3	0.04	3.6
R7	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.04	0.03	3.3	0.04	3.6	0.03	3.3	0.04	3.6
R8	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.04	0.03	2.9	0.03	3.2	0.03	3	0.03	3.3
R9	<0.01	0.03	<0.01	0.06	<0.01	0.03	<0.01	0.06	0.03	3.2	0.03	3.5	0.03	3.2	0.03	3.4

RECEPTORS	Annual Mean V								Maximum 1h Mean V							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R10	<0.01	0.04	<0.01	0.07	<0.01	0.04	<0.01	0.07	0.03	3.3	0.04	3.6	0.03	3.3	0.04	3.6
R11	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.04	0.03	3.3	0.04	3.6	0.03	3.3	0.04	3.6
R12	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.04	0.03	3.1	0.03	3.4	0.03	3.2	0.03	3.4
R13	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	<0.01	0.1	<0.01	0.4	<0.01	0.1	<0.01	0.4
R14	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	<0.01	0	<0.01	0.3	<0.01	<0.01	<0.01	0.3
R15	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.04	4.1	0.04	4.4	0.04	4.1	0.04	4.4
R16	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.04	0.03	3.1	0.03	3.4	0.03	3.1	0.03	3.4
R17	<0.01	0.04	<0.01	0.07	<0.01	0.04	<0.01	0.07	0.03	3	0.03	3.3	0.03	3.1	0.03	3.4
R18	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.04	0.03	2.5	0.03	2.8	0.03	2.5	0.03	2.8
R19	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.01	1.3	0.02	1.6	0.01	1.3	0.02	1.6

RECEPTORS	Annual Mean V								Maximum 1h Mean V							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R20	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.02	2.4	0.03	2.7	0.02	2.3	0.03	2.6
R21	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.03	2.7	0.03	3	0.03	2.6	0.03	2.8
R22	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.04	3.8	0.04	4.1	0.04	3.8	0.04	4.1
R23	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.04	3.9	0.04	4.2	0.04	3.9	0.04	4.2
R24	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	<0.01	0.6	<0.01	0.9	<0.01	0.6	<0.01	0.9

Table 8A.43: Maximum future baseline concentrations, NH_3, for the worst-case meteorological data year

RECEPTORS	Annual Mean NH_3								Maximum 1h Mean NH_3							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R1	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.52	0.02	3.94	0.16	0.51	0.02	3.93	0.16
R2	0.01	<0.01	1.7	0.96	0.01	<0.01	1.7	0.96	0.59	0.02	4.01	0.16	0.59	0.02	4.01	0.16
R3	0.03	0.01	1.7	0.96	0.03	0.01	1.7	0.96	0.58	0.02	4	0.16	0.59	0.02	4.01	0.16
R4	0.01	<0.01	1.7	0.96	0.01	<0.01	1.7	0.96	0.47	0.02	3.89	0.16	0.48	0.02	3.9	0.16
R5	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.6	0.02	4.02	0.16	0.61	0.02	4.03	0.16
R6	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.55	0.02	3.97	0.16	0.55	0.02	3.97	0.16
R7	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.55	0.02	3.97	0.16	0.55	0.02	3.97	0.16
R8	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.49	0.02	3.9	0.16	0.51	0.02	3.93	0.16
R9	0.03	0.01	1.7	0.96	0.03	0.01	1.7	0.96	0.53	0.02	3.95	0.16	0.53	0.02	3.95	0.16
R10	0.03	0.02	1.7	0.97	0.03	0.02	1.7	0.97	0.55	0.02	3.97	0.16	0.56	0.02	3.98	0.16
R11	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.55	0.02	3.97	0.16	0.56	0.02	3.98	0.16

RECEPTORS	Annual Mean NH_3								Maximum 1h Mean NH_3							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R12	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.52	0.02	3.94	0.16	0.53	0.02	3.95	0.16
R13	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.02	<0.01	3.44	0.14	0.02	<0.01	3.44	0.14
R14	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	<0.01	<0.01	3.42	0.14	<0.01	<0.01	3.42	0.14
R15	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.7	0.03	4.11	0.16	0.69	0.03	4.11	0.16
R16	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.52	0.02	3.94	0.16	0.53	0.02	3.95	0.16
R17	0.03	0.02	1.7	0.97	0.03	0.02	1.7	0.97	0.5	0.02	3.91	0.16	0.53	0.02	3.94	0.16
R18	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.42	0.02	3.84	0.15	0.42	0.02	3.84	0.15
R19	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.22	<0.01	3.64	0.15	0.22	<0.01	3.63	0.15
R20	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.4	0.02	3.82	0.15	0.38	0.02	3.8	0.15
R21	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.45	0.02	3.87	0.15	0.43	0.02	3.85	0.15

RECEPTORS	Annual Mean NH_3								Maximum 1h Mean NH_3							
	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R22	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.63	0.03	4.05	0.16	0.64	0.03	4.05	0.16
R23	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.66	0.03	4.08	0.16	0.66	0.03	4.08	0.16
R24	<0.01	<0.01	1.7	0.95	<0.01	<0.01	1.7	0.95	0.11	<0.01	3.52	0.14	0.1	<0.01	3.51	0.14

Table 8A.44: Maximum future baseline concentrations, PCBs, for the worst-case meteorological data year

	Annual Mean PCBs								Maximum 1h Mean PCBs							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R2	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
R3	<0.01	0.01	<0.01	0.02	<0.01	0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01
R4	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
R6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R9	<0.01	0.01	<0.01	0.02	<0.01	0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

	Annual Mean PCBs								Maximum 1h Mean PCBs							
RECEPTORS	12 MJ/kg Scenario				10.5 MJ/kg Scenario				12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R10	<0.01	0.02	<0.01	0.02	<0.01	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
R12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
R16	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R17	<0.01	0.01	<0.01	0.02	<0.01	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

	Annual Mean PCBs								Maximum 1h Mean PCBs							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R21	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R22	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
R23	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01
R24	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table 8A.45: Maximum future baseline concentrations, Dioxins and Furans, for the worst-case meteorological data year

	Annual Mean Dioxins and Furan							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R1	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R2	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R3	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R4	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R5	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R6	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R7	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R8	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R9	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R10	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R11	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R12	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R13	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R14	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R15	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R16	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A

Annual Mean Dioxins and Furan

RECEPTORS	12 MJ/kg Scenario				10.5 MJ/kg Scenario			
	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL	Max CDC	CDC as % AQAL	TOTAL	TOTAL as % AQAL
R17	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R18	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R19	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R20	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R21	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R22	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R23	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A
R24	<0.01	N/A	<0.01	N/A	<0.01	N/A	<0.01	N/A

Table 8A.46: Maximum future baseline concentrations, HF, for the worst-case meteorological data year

	Weekly Mean HF								Maximum 1h mean HF							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R1	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.1	0.06	0.11	0.07	0.11	0.07	0.11	0.07
R2	0.01	0.08	0.02	0.1	0.01	0.08	0.02	0.1	0.12	0.07	0.12	0.08	0.12	0.08	0.13	0.08
R3	0.02	0.13	0.02	0.15	0.02	0.13	0.02	0.15	0.11	0.07	0.12	0.08	0.12	0.08	0.13	0.08
R4	0.02	0.1	0.02	0.12	0.02	0.11	0.02	0.12	0.09	0.06	0.1	0.06	0.1	0.06	0.11	0.07
R5	<0.01	0.06	0.01	0.08	0.01	0.06	0.01	0.08	0.12	0.07	0.12	0.08	0.13	0.08	0.13	0.08
R6	<0.01	0.05	0.01	0.07	<0.01	0.06	0.01	0.08	0.11	0.07	0.11	0.07	0.11	0.07	0.12	0.08
R7	<0.01	0.05	0.01	0.07	<0.01	0.06	0.01	0.08	0.11	0.07	0.11	0.07	0.12	0.07	0.12	0.08
R8	<0.01	0.04	<0.01	0.06	<0.01	0.04	<0.01	0.06	0.1	0.06	0.1	0.06	0.11	0.07	0.11	0.07
R9	0.02	0.11	0.02	0.13	0.02	0.12	0.02	0.14	0.1	0.07	0.11	0.07	0.11	0.07	0.12	0.07
R10	0.03	0.17	0.03	0.19	0.03	0.18	0.03	0.2	0.11	0.07	0.11	0.07	0.12	0.07	0.12	0.08
R11	0.01	0.06	0.01	0.08	0.01	0.07	0.01	0.09	0.11	0.07	0.11	0.07	0.12	0.07	0.12	0.08
R12	0.03	0.16	0.03	0.18	0.03	0.17	0.03	0.19	0.1	0.06	0.11	0.07	0.11	0.07	0.12	0.07
R13	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01
R14	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
R15	<0.01	0.02	<0.01	0.04	<0.01	0.02	<0.01	0.04	0.14	0.09	0.14	0.09	0.14	0.09	0.15	0.09
R16	<0.01	0.04	<0.01	0.05	<0.01	0.04	<0.01	0.06	0.1	0.06	0.11	0.07	0.11	0.07	0.12	0.07
R17	0.03	0.16	0.03	0.18	0.03	0.17	0.03	0.19	0.1	0.06	0.1	0.06	0.11	0.07	0.12	0.07
R18	<0.01	0.03	<0.01	0.05	<0.01	0.03	<0.01	0.05	0.08	0.05	0.09	0.06	0.09	0.06	0.09	0.06

	Weekly Mean HF								Maximum 1h mean HF							
RECEPTORS	**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**				**12 MJ/kg Scenario**				**10.5 MJ/kg Scenario**			
	Max CDC	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**	**Max CDC**	**CDC as % AQAL**	**TOTAL**	**TOTAL as % AQAL**
R19	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.04	0.03	0.05	0.03	0.04	0.03	0.05	0.03
R20	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.08	0.05	0.08	0.05	0.08	0.05	0.09	0.05
R21	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.09	0.05	0.09	0.06	0.09	0.06	0.1	0.06
R22	<0.01	0.02	<0.01	0.04	<0.01	0.02	<0.01	0.04	0.12	0.08	0.13	0.08	0.13	0.08	0.14	0.09
R23	<0.01	0.05	0.01	0.06	<0.01	0.05	0.01	0.07	0.13	0.08	0.14	0.08	0.14	0.09	0.14	0.09
R24	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.02	0.01	0.03	0.02	0.02	0.01	0.03	0.02

Additional Consideration of Group 3 Metals Using EA Guidance

8.6.20 The EA has released guidance on the assessment of Group 3 metals in light of the revised lower AQAL for arsenic, nickel and chromium (VI), that are based on actual emissions achieved at existing permitted facilities. As arsenic and chromium (VI) have future baseline concentrations close to or above their respective AQAL when modelled on a worst-case screening basis, these metals are considered further (following the EA guidance outlined below).

8.6.21 As set out above, in the first instance and as a first step, worst-case screening was carried out. The second step in the assessment is to revise the predicted concentrations using emissions data which have been measured by the EA at municipal waste incinerators. Table 8A.47 presents the revised CDC and future baseline concentrations values at the worst affected sensitive receptor, for arsenic and chromium (VI) using the mean, maximum and minimum emission concentrations provided by the EA guidance.

8.6.22 The results show that the CDC for arsenic and chromium (VI) with minimum, mean and maximum emission concentrations can be considered insignificant, as the maximum CDC is well below 1% of the Environmental Standard. The future baseline for chromium(VI) is above the Environmental Standard criteria for the maximum emission scenario, due to the conservative background value used.

Table 8A.47: Maximum future baseline concentrations, for As and Cr (VI), for the worst-case meteorological year

POLLUTANT		AVERAGING PERIOD	AQAL (µg/m^3)	CDC	CDC % AQAL	TOTAL	TOTAL % AQAL
Cr (VI)	Mean emissions	Annual Mean	0.0002	2.0×10^{-7}	0.1	9.86×10^{-4}	493
	Max emissions	Annual Mean	0.0002	6.1×10^{-7}	0.3	9.87×10^{-4}	493
	Min emissions	Annual Mean	0.0002	1.0×10^{-8}	<0.1	9.86×10^{-4}	493
As	Mean emissions	Annual Mean	0.003	2.0×10^{-8}	<0.1	8.55×10^{-4}	28.5
	Max emissions	Annual Mean	0.003	5.0×10^{-7}	<0.1	8.56×10^{-4}	28.5
	Min emissions	Annual Mean	0.003	4.0×10^{-9}	<0.1	8.55×10^{-4}	28.5

Additional Consideration of Benzo[a]Pyrene Emissions

8.6.23 The results presented in Table 8A.48 showed that the initial assumption that all emissions of PAH from the Consented Development are composed of benzo[a]pyrene, combined with the assumption that the emission occurs continuously at the ELV, results in a future baseline of more than the annual

mean Environmental Standard, when combined with the measured background concentration.

8.6.24 Benzo[a]pyrene emissions have been considered using an emission rate derived from benzo[a]pyrene concentrations measured at a comparable facility operating within the UK. This provides a more realistic basis for establishing a future baseline, based on emissions from a comparable process.

8.6.25 The benzo[a]pyrene emission rate used is derived from a measured concentration from the Sheffield ERF in 2012, of 9.7 x 10^{-6} mg/Nm^3. This gives a mass emission rate of 6.5 x 10^{-7} g/s per stack. This value has been taken from a published assessment undertaken for another proposed EfW by AECOM (AECOM, 2016).

8.6.26 Using this revised emission rate for benzo[a]pyrene gives a maximum predicted CDC of less than 0.1% of the Environmental Standard.

Table 8A.48: Predicted future baseline concentrations, for B[a]P, for the worst-case meteorological data year, using measured emissions data from a comparable facility

POLLUTANT	AVERAGING PERIOD	AQAL (µg/m^3)	CDC	CDC % AQAL	TOTAL	TOTAL % AQAL
B[a]P	Annual Mean	2.5 x 10^{-4}	6.5 x 10^{-8}	0.03	8.23 x10^{-4}	329

Modelling Results: Impact on Designated Nature Sites

8.6.27 The results of the dispersion modelling of predicted concentrations at sensitive ecological receptors are presented below. The tables set out the predicted CDC to atmospheric concentrations of NO_X, SO_2, NH_3 and HF, and also acid deposition and nutrient nitrogen deposition.

8.6.28 The impact of CDCs of point source emissions at ecological receptors has been determined from the maximum model output at discrete receptor locations. The CDC to Critical Level values (predicted from operation of the plant at BAT-AEL ELVs) have been compared with Critical Level (CLE) and Critical Load (CL) values at each of the identified sensitive ecological receptors. Background contributions (BKG) are also reported.

8.6.29 An assessment of the significance of the effects of the air quality impacts from the Consented Development on designated nature sites has been included within Chapter 10: Ecology. The Proposed Project is not predicted to give rise to any material change in concentrations of modelled pollutants at the designated nature sites when compared to the Consented Development.

Table 8A.49: Dispersion modelling results for ecological receptors using APIS background concentrations – Annual Mean NO_x

REC ID	SITE NAME & LAND USE TYPE	12 MJ/kg Scenario						10.5 MJ/kg Scenario					
		BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)	BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)
E1	Burnham Beeches SAC	18.6	30	0.12	0.4	18.7	62	18.6	30	0.12	0.4	18.7	62
E2	Windsor Forest and Great Park SAC	18.0	30	0.06	0.2	18.1	60	18.0	30	0.06	0.2	18.1	60
E3	Bisham Woods and Chilterns Beechwoods SAC	16.4	30	0.03	<0.1	16.4	55	16.4	30	0.03	<0.1	16.4	55
E4	Ancient Woodland	19.3	30	0.12	0.4	19.4	65	19.3	30	0.13	0.4	19.4	65
E5	Ancient Woodland	19.3	30	0.15	0.5	19.4	65	19.3	30	0.15	0.5	19.4	65

Table 8A.50: Dispersion modelling results for ecological receptors using APIS background concentrations – 24hl Mean NO_X

REC ID	SITE NAME & LAND USE TYPE	12 MJ/kg Scenario						10.5 MJ/kg Scenario					
		BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)	BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)
E1	Burnham Beeches SAC	27.9	75	2.2	2.9	30.1	40	27.9	75	2.3	3	30.1	40
E2	Windsor Forest and Great Park SAC	27.0	75	1	1.4	28.0	37	27.0	75	1.1	1.4	28.1	37
E3	Bisham Woods and Chilterns Beechwoods SAC	24.6	75	0.6	0.8	25.3	34	24.6	75	0.6	0.8	25.3	34
E4	Ancient Woodland	28.9	75	1.9	2.6	30.9	41	28.9	75	2	2.6	30.9	41
E5	Ancient Woodland	28.9	75	2.8	3.7	31.7	42	28.9	75	2.8	3.8	31.8	42

Table 8A.51: Dispersion modelling results for ecological receptors – Annual Mean SO_2

REC ID	SITE NAME & LAND USE TYPE	12 MJ/kg Scenario						10.5 MJ/kg Scenario					
		BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)	BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)
E1	Burnham Beeches SAC	1.4	10	0.04	0.4	1.43	14	1.4	10	0.04	0.4	1.43	14
E2	Windsor Forest and Great Park SAC	1.6	10	0.02	0.2	1.57	16	1.6	10	0.02	0.2	1.57	16
E3	Bisham Woods and Chilterns Beechwoods SAC	1.1	10	<0.01	<0.1	1.12	11	1.1	10	<0.01	<0.1	1.12	11
E4	Ancient Woodland	1.5	10	0.04	0.4	1.57	16	1.5	10	0.04	0.4	1.57	16
E5	Ancient Woodland	1.5	10	0.05	0.5	1.58	16	1.5	10	0.05	0.5	1.58	16

Table 8A.52: Dispersion modelling results for ecological receptors – Annual Mean NH_3

REC ID	SITE NAME & LAND USE TYPE	12 MJ/kg Scenario						10.5 MJ/kg Scenario					
		BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)	BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)
E1	Burnham Beeches SAC	1.68	1	<0.01	0.5	1.69	169	1.68	1	<0.01	0.52	1.69	169
E2	Windsor Forest and Great Park SAC	1.6	1	<0.01	0.3	1.60	160	1.6	1	<0.01	0.26	1.60	160
E3	Bisham Woods and Chilterns Beechwoods SAC	1.83	1	<0.01	0.1	1.83	183	1.83	1	<0.01	0.11	1.83	183
E4	Ancient Woodland	1.63	1	<0.01	0.5	1.64	164	1.63	1	<0.01	0.53	1.64	164
E5	Ancient Woodland	1.63	1	<0.01	0.6	1.64	164	1.63	1	<0.01	0.62	1.64	164

Table 8A.53: Dispersion modelling results for ecological receptors – 24 Hour Mean HF

REC ID	SITE NAME & LAND USE TYPE	12 MJ/kg Scenario						10.5 MJ/kg Scenario					
		BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)	BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)
E1	Burnham Beeches SAC	0.01	5	0.02	0.37	0.02	0.5	0.01	5	0.02	0.38	0.02	0.5
E2	Windsor Forest and Great Park SAC	0.01	5	<0.01	0.17	0.01	0.2	0.01	5	<0.01	0.18	0.01	0.2
E3	Bisham Woods and Chilterns Beechwoods SAC	0.01	5	<0.01	0.1	0.01	0.1	0.01	5	<0.01	0.11	0.01	0.1
E4	Ancient Woodland	0.01	5	0.02	0.32	0.02	0.4	0.01	5	0.02	0.33	0.02	0.5
E5	Ancient Woodland	0.01	5	0.02	0.46	0.03	0.6	0.01	5	0.02	0.47	0.03	0.6

Table 8A.54: Dispersion modelling results for ecological receptors – Weekly Mean HF

REC ID	SITE NAME & LAND USE TYPE	12 MJ/kg Scenario						10.5 MJ/kg Scenario					
		BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)	BKG (µg/m^3)	CLE (µg/m^3)	CDC (µg/m^3)	CDC/ CL (%)	TOTAL (µg/m^3)	TOTAL/ CL (%)
E1	Burnham Beeches SAC	0.003	0.5	0.005	1	0.008	1.6	0.003	0.5	0.005	1	0.008	1.7
E2	Windsor Forest and Great Park SAC	0.003	0.5	0.003	1	0.006	1.2	0.003	0.5	0.003	1	0.006	1.3
E3	Bisham Woods and Chilterns Beechwoods SAC	0.003	0.5	0.002	0	0.005	1.0	0.003	0.5	0.002	0	0.005	1.0
E4	Ancient Woodland	0.003	0.5	0.006	1	0.009	1.8	0.003	0.5	0.006	1	0.009	1.9
E5	Ancient Woodland	0.003	0.5	0.007	1	0.010	1.9	0.003	0.5	0.007	1	0.010	2.0

Table 8A.55: Dispersion modelling results for ecological receptors – nutrient nitrogen deposition (kg/ha/yr)

REC ID	SITE NAME & LAND USE TYPE	12 MJ/kg Scenario						10.5 MJ/kg Scenario					
		BKG (kg/ha/yr)	CLE (kg/ha/yr)	CDC (kg/ha/yr)	CDC/CL (%)	TOTAL (kg/ha/yr)	TOTAL/CL (%)	BKG (kg/ha/yr)	CLE (kg/ha/yr)	CDC (kg/ha/yr)	CDC/CL (%)	TOTAL (kg/ha/yr)	TOTAL/CL (%)
E1	Burnham Beeches SAC	28.14	10	0.08	0.75	28.22	282	28.14	10	0.08	0.76	28.22	282
E2	Windsor Forest and Great Park SAC	25.9	10	0.04	0.38	25.94	259	25.9	10	0.04	0.38	25.94	259
E3	Bisham Woods and Chilterns Beechwoods SAC	29.54	10	0.02	0.16	29.56	296	29.54	10	0.02	0.17	29.56	296
E4	Ancient Woodland	27.44	10	0.08	0.76	27.52	275	27.44	10	0.08	0.77	27.52	275
E5	Ancient Woodland	27.44	10	0.09	0.9	27.53	275	27.44	10	0.09	0.91	27.53	275

Table 8A.56: Dispersion modelling results for ecological receptors – total acid deposition N + S (keq/ha/yr)

REC ID	SITE NAME & LAND USE TYPE	BKG N DEP (keq/ha/yr)	BKG S DEP (keq/ha/yr)	12 MJ/kg Scenario							10.5 MJ/kg Scenario			
				CLminN (keq/ha/yr)	CLmaxN (keq/ha/yr)	CLmaxS (keq/ha/yr)	CDC (keq/ha/yr)	CDC/CL (%)	TOTAL (keq/ha/yr)	TOTAL/CL (%)	CDC (keq/ha/yr)	CDC/CL (%)	TOTAL (keq/ha/yr)	TOTAL/CL (%)
E1	Burnham Beeches SAC	2.05	0.21	0.142	2.056	1.699	0.02	0.96	2.28	111	0.02	0.98	2.28	111
E2	Windsor Forest and Great Park SAC	1.92	0.19	0.142	1.044	0.759	0.01	0.95	2.12	203	0.01	0.97	2.12	203
E3	Bisham Woods and Chilterns Beechwoods SAC	2.18	0.18	0.142	1.647	1.505	0.00	0.26	2.36	144	0.00	0.27	2.36	144
E4	Ancient Woodland	1.96	0.23	0.357	2.052	1.695	0.02	0.98	2.21	108	0.02	0.99	2.21	108
E5	Ancient Woodland	1.96	0.23	0.357	2.052	1.695	0.02	1.16	2.21	108	0.02	1.17	2.21	108

8.7 Assessment of Limitations and Assumptions

8.7.1 This section outlines the potential limitations associated with the dispersion modelling assessment. Where assumptions have been made, these are also detailed here. There are no limitations or assumptions for the construction dust assessment.

8.7.2 In order to minimise the likelihood of under-estimating the CDC to ground level concentrations from the stack, the following assumptions have been made within the assessment:

- the modelling predictions are based on the use of five full years of meteorological data from Heathrow Airport, for the years 2015 to 2019 inclusive. The use of five years data can be considered to represent the majority of meteorological conditions that would be experienced during the future operation of the Consented Development; and
- emission concentrations for the process are calculated based on the use of IED limits, BAT-AEL concentrations, or maximum measured emission rates at comparable facilities.

8.7.3 The following assumptions have been made in the preparation of the model:

- with the exception of As, Ni and Cr, the emission concentrations for individual metals have been modelled as being emitted at the emission limit value for the whole group. Actual heavy metal emission rates at comparable facilities are normally well below WID limits, and as such the values used are conservative;
- emissions of Cr (VI) have been considered separately and have been evaluated using guidance issued by the EA's Air Quality Modelling and Assessment Unit. The maximum reported measured concentrations for Cr (VI) at operational facilities in the UK has been used to calculate the emission rate for the Consented Development.

8.7.4 In particular, the use of IED or BAT-AEL emission limits for most of the pollutants in the study is likely to result in an over-prediction of impacts from the Consented Development. Emissions tests on other facilities of comparable design within the UK have shown that actual emissions associated with this type of facility actually represent only a fraction of their respective ELVs for most pollutants.

8.7.5 The methods adopted for the assessment recognise the points raised above and are sufficiently precautionary in nature to ensure the predicted results are conservative. These limitations and assumptions do not materially affect the conclusion of the assessment.

8.8 References

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