Document 3.3 – 2010 Environmental Statement (2013 Addendum)

ES Chapter 7

Wheelabrator Kemsley (K3 Generating Station) and Wheelabrator Kemsley North (WKN) Waste to Energy Facility DCO

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Supplementary Report to the Environmental Statement Chapter 7 – Air Quality

Introduction

- 1. This note has been produced to supplement the Environmental Statement (ES) Air Quality chapter (Chapter 7) to take account of a change to the site layout of the proposed Kemsley Sustainable Energy Plant (SEP).
- 2. Changes in the location of the stack and the location and dimensions of nearby buildings can alter the dispersion characteristics, potentially changing the process contributions to ground level pollutant concentrations. Therefore, the releases of pollutants from the proposed stack at the Kemsley site have been re-modelled for the new proposed site layout, to determine whether the ground level concentrations at sensitive human receptors remain acceptable.

Input Data

- 3. The emissions data for the proposed stack remain the same as in the original ES chapter (stack K3; Tables 7.8 and 7.9); only the location of the stack and the location and dimensions of nearby buildings are different. The original and updated layout plans are shown in Figure 1.
- 4. To allow for direct comparison of the updated results with the results in the ES chapter, the same meteorological data, complex terrain data, baseline air quality data, receptors and impact significance criteria have been used.
- 5. The original models were run with ADMS 4.2 modelling software. In the intervening period, the modelling software has been updated by its supplier to version 5; the updated models were run on the latest version, ADMS 5.

Results

- The updated results for Tables 7.19 to 7.22 in the original ES chapter are presented below.
 The original results tables are presented in Annex A, for comparison.
- 7. Tables 7.19 and 7.21 summarise the maximum process contribution (PC) to ground-level concentrations that are predicted when the model is run with pollutant releases at 100% of the short-term and long-term emission limit values, respectively.
- 8. Tables 7.20 and 7.22 present the resulting predicted environmental concentration (PEC) once the PC has been added to the background ambient concentration (AC), for all relevant

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pollutants with short-term and long-term emission limit values, respectively. The PEC for each pollutant is then compared with the relevant Environmental Quality Standard (EQS).

Ground-level Concentrations for Releases at Short-term Emission Limits

Table 7.19: Maximum Process Contributions (µg.m ⁻³) at Short-Term EU Directive Emission Limits								
Pollutant	Averaging Period	EQS	Max PC	Max PC as % of EQS	Magnitude of PC			
NO ₂	1 hour 99.79th percentile	200	25.7	12.9	Small			
50.	15 minute 99.9th percentile	266	39.3	14.8	Small			
302	1 hour 99.73rd percentile	350	36.6	10.5	Small			
HCI	1 hour maximum	750	13.2	1.8	Very Small			
HF	1 hour maximum	160	0.9	0.5	Very Small			

Note: PC – Process contribution

EQS - Environmental Quality Standard

Table 7.20: Maximum Predicted Environmental Concentrations (µg.m ⁻³) at Short-Term EU Directive Emission Limits								
Pollutant	Averaging Period EQS AC Max Max PEC as % Signifi PEC of EQS Description							
NO ₂	1 hour 99.79th percentile	200	42.6	68.3	34.2	Slight Adverse		
80.	15 minute 99.9th percentile	266	4.0	43.3	16.3	Slight Adverse		
SO_2	1 hour 99.73rd percentile	350	4.0	40.6	11.6	Slight Adverse		
HCI	1 hour maximum	750	0.6	13.8	1.8	Negligible		
HF	1 hour maximum	160	4.9	5.8	3.6	Nealiaible		

Note: AC – Ambient concentration

PEC – Predicted environmental concentrations

EQS - Environmental Quality Standard

- 9. The results presented in Table 7.19 and Table 7.20 show that there were slight variations in the process contributions compared with what was predicted in the original assessment, with decreases in the PCs for NO₂ and SO₂ (maximum decrease of 6.1 µg.m⁻³, for the 99.73rd percentile of hourly mean SO₂) and slight increases in the PCs for HCl and HF (maximum increase of 0.3 µg.m⁻³, for the maximum hourly mean HCl).
- 10. The significance criteria show that, if the SEP operated at 100% of the short-term emission limits, the air quality impacts from the predicted concentrations would range from 'negligible' to 'slight adverse'. The descriptors for the magnitude of the PCs and the significance descriptors are the same as in the original assessment for all of the pollutants.
- 11. All of the PECs are well below the relevant EQSs, so the impact on local air quality from emissions from the SEP at the short-term emission limits remains acceptable.

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Ground-level Concentrations for Releases at Long-term Emission Limits

Table 7.21: Predicted Maximum Process Contributions (μg.m ⁻³) at Long-Term EU Directive Emission Limits							
Pollutant	Averaging Period	EQS	Max PC	Max PC as % of EQS	Magnitude of PC		
PM ₁₀	24 hour (90.41st percentile)	50	0.46	0.9%	Very Small		
	Annual	40	0.12	0.3%	Very Small		
	1 hour (maximum)	750	2.19	0.3%	Very Small		
TICI	Annual	20	0.13	0.6%	Very Small		
HF	1 hour (maximum)	160	0.22	0.1%	Very Small		
	15 minute (99.90th percentile)	266	9.84	3.7%	Very Small		
SO ₂	1 hour (99.73rd percentile)	350 9.13 2.6%	2.6%	Very Small			
	24 hour (99.18th percentile)	125	5.35	4.3%	Very Small		
	Annual	50	0.63	1.3%	Small		
NO ₂	1 hour (99.79th percentile)	200	12.9	6.4%	Very Small		
	Annual	40	1.75	4.4%	Small		
СО	8 hour (maximum daily running)	10,000	9.13	0.1%	Very Small		
	Annual	350	0.63	0.2%	Very Small		
04	1 hour (maximum)	1.5	5.47E-03	0.4%	Very Small		
Ca	Annual	0.005	3.13E-04	6.3%	Medium		
	1 hour (maximum)	30	5.47E-03	0.02%	Very Small		
	Annual	1	3.13E-04	0.03%	Very Small		
Ha	1 hour (maximum)	7.5	5.47E-03	0.07%	Very Small		
i ig	Annual	0.25	3.13E-04	0.1%	Very Small		
Sh	1 hour (maximum)	150	1.22E-02	0.008%	Very Small		
00	Annual	5	5.47E-03 0.4% 3.13E-04 6.3% 5.47E-03 0.02% 3.13E-04 0.03% 5.47E-03 0.07% 3.13E-04 0.1% 1.22E-02 0.008% 6.96E-04 0.01% 5.34E-03 0.04%	Very Small			
As	1 hour (maximum)	15	5.34E-03	0.04%	Very Small		
, 10	Annual	0.2	12.9 6.4% Ver 1.75 4.4% 5 9.13 0.1% Ver 0.63 0.2% Ver 5.47E-03 0.4% Ver 3.13E-04 6.3% M 5.47E-03 0.02% Ver 3.13E-04 6.3% M 5.47E-03 0.02% Ver 3.13E-04 0.3% Ver 5.47E-03 0.02% Ver 3.13E-04 0.03% Ver 5.47E-03 0.07% Ver 3.13E-04 0.1% Ver 5.47E-03 0.07% Ver 3.13E-04 0.1% Ver 5.47E-03 0.07% Ver 1.22E-02 0.008% Ver 5.34E-03 0.04% Ver 3.06E-04 0.2% Ver 1.54E-03 1.5% 5 1.22E-02 0.2% Ver 6.96E-04 0.3% Ver 6.96E-04	Very Small			
Cr	1 hour (maximum)	3	2.68E-02	0.9%	Very Small		
	Annual	0.1	1.54E-03	1.5%	Small		
Со	1 hour (maximum)	6	1.22E-02	0.2%	Very Small		
	Annual	0.2	6.96E-04	0.3%	Very Small		
Cu	1 hour (maximum)	60	1.17E-02	0.02%	Very Small		
Pb	Annual	2 0.5	6.70E-04 2.20E-03	0.03%	Very Small Very Small		
	1 hour (maximum)	1500	1 22 02	0.0008%	Vory Small		
Mn		1300	6.065.04	0.000878	Very Small		
	1 hour (maximum)	30	0.90E-04	0.07%	Very Small		
Ni		1	2.72L-02	0.09%	Very Small		
	1 hour (maximum)	5	1.30E-03	0.2%	Very Small		
V		1	6.96E-04	0.07%	Very Small		
Dioxins & Furans	Annual	-	1 25F-09	-	-		
	1 hour (maximum)	2500	1.09	0.04%	Very Small		
Ammonia	Annual	180	0.06	0.03%	Very Small		
PAHs (BlaiP)	Annual	0.00025	1.25E-05	5.0%	Medium		
PCBs	Annual	0.2	6.27E-05	0.03%	Very Small		

Note: PC – Process contribution EQS – Environmental Quality Standard



Table 7.22: Predicted Environmental Concentrations (μg.m ⁻³) at Long-Term EU Directive Emission Limits								
Pollutant	Averaging	EQS	AC	Max PEC Max PEC Significance				
	Period				as % of	Descriptor		
	i onou					Becompton		
					EQS			
	24 hour (90.41st	50	28.3	28.8	58%	Nealiaible		
PM ₁₀	percentile)	40	20.2	29.4	710/	Negligible		
	Annual	40	20.3	20.4	0.4%	Negligible		
HCI		20	0.0	2.79	0.4%	Negligible		
	1 hour (maximum)	20	0.3	0.43 5.14	2.170	Negligible		
		100	4.92	5.14	J.Z /0	Negligible		
		266	10	13.8	5 2%	Nealiaible		
	(33.30(1) nercentile)	200	4.0	15.0	J.2 /0	Negligible		
	1 hour (99 73rd							
SO ₂	nercentile)	350	4.0	13.1	3.8%	Negligible		
	24 hour (99 18th							
	percentile)	125	4.0	9.35	7.5%	Negligible		
	Annual	50	2.0	2.63	5.3%	Slight Adverse		
	1 hour (99,79th				0.070			
NO ₂	percentile)	200	42.6	55.5	28%	Negligible		
_	Annual	40	21.3	23.1	58%	Slight Adverse		
	8 hour (maximum	10 000	5400	5409	54%	Nealiaible		
CO	daily running)	10,000	0400	0400	0470	Negligible		
	Annual	350	0.27	0.90	0.3%	Negligible		
Cd	1 hour (maximum)	1.5	0.4 x 10 ⁻³	5.87E-03	0.4%	Negligible		
	Annual	0.005	0.2 x 10 ⁻³	5.13E-04	10%	Slight Adverse		
Ті	1 hour (maximum)	30	0.02 x 10 ⁻³	5.49E-03	0.02%	Negligible		
	Annual	1	0.01 x 10 ⁻³	3.23E-04	0.03%	Negligible		
На	1 hour (maximum)	7.5	0.1 x 10 ⁻³	5.57E-03	0.1%	Negligible		
	Annual	0.25	0.2 x 10 ⁻³	5.13E-04	0.2%	Negligible		
Sh	1 hour (maximum)	150	2.8 x 10 ⁻³	1.50E-02	0.01%	Negligible		
	Annual	5	1.4 x 10 ⁻³	2.10E-03	0.04%	Negligible		
Δs	1 hour (maximum)	15	2.0 x 10 ⁻³	7.34E-03	0.0%	Negligible		
//0	Annual	0.2	1.0 x 10 ⁻³	1.31E-03	0.7%	Negligible		
Cr	1 hour (maximum)	3	2.3 x 10 ⁻³	2.91E-02	1.0%	Negligible		
01	Annual	0.1	4.6 x 10 ⁻³	6.14E-03	6.1%	Slight Adverse		
Co	1 hour (maximum)	6	0.2 x 10 ⁻³	1.24E-02	0.2%	Negligible		
	Annual	0.2	0.1 x 10 ⁻³	7.96E-04	0.4%	Negligible		
Cu	1 hour (maximum)	60	10.0 x 10 ⁻³	2.17E-02	0.04%	Negligible		
	Annual	2	5.0 x 10⁻³	5.67E-03	0.3%	Negligible		
Pb	Annual	0.5	15 x 10 ⁻³	1.72E-02	3.4%	Negligible		
Ma	1 hour (maximum)	1500	6.7 x 10 ⁻³	1.89E-02	0.0013%	Negligible		
IVIN	Annual	1	13.4 x 10 ⁻³	1.41E-02	1.4%	Negligible		
Ni	1 hour (maximum)	30	6.4 x 10 ⁻³	3.36E-02	0.1%	Negligible		
	Annual	1	3.2 x 10 ⁻³	4.76E-03	0.5%	Negligible		
N	1 hour (maximum)	5	14.8 x 10 ⁻³	2.70E-02	0.5%	Negligible		
V	Annual	1	7.4 x 10 ⁻³	8.10E-03	0.8%	Negligible		
Dioxins & Furans	Annual	-	6.0 x 10 ⁻³	6.00E-03	-			
Ammania	1 hour (maximum)	2500	2.2	3.29	0.1%	Negligible		
Ammonia	Annual	180	1.1	1.16	0.6%	Negligible		
PAHs (B[a]P)	Annual	0.00025	9.0 x 10 ⁻⁵	1.03E-04	41%	Slight Adverse		
PCBs	Annual	0.2	1.10×10^{-6}	6.38E-05	0.03%	Nealiaible		

Note:

AC – Ambient concentration PEC – Predicted environmental concentrations

EQS - Environmental Quality Standard



- 12. The results presented in Table 7.21 and Table 7.22 show that there were slight variations in the process contributions compared with what was predicted in the original assessment, with decreases in the PCs for all pollutants measured (maximum decrease of 1.9 μ g.m⁻³, for the 99.18th percentile of 24 hour mean SO₂), with the exception of slight increases in the PCs for the 99.9th percentile of 15 minute mean SO₂ and in the PCs for the maximum hourly mean concentrations (maximum increase of 0.8 μ g.m⁻³, for the 99.9th percentile of 15 minute mean SO₂).
- 13. The significance criteria also show that, if the SEP operated at 100% of the long-term emission limits, the air quality impacts from the predicted concentrations would range from 'negligible' to 'slight adverse'.
- 14. In the original assessment, the descriptor of the magnitude of the PC and significance descriptor were listed as 'very small' and 'slight adverse' for 90.41st percentile 24 hour mean PM₁₀ and maximum 8 hour rolling mean CO, where these should have been 'very small' and 'negligible'. In addition, the annual mean NO₂ was listed as 'small' and 'slight adverse', where it should have been 'medium' and 'slight adverse', and the annual mean Cr was listed as 'very small' and 'negligible', where it should have been 'small' and 'slight adverse'. Taking these into account, the descriptors of magnitude of the PCs and the significance descriptors are the same as in the original assessment for all of the pollutants, with the exception of annual mean NO₂, where the descriptor for magnitude of the PC has reduced from 'medium' to 'small'.
- 15. All of the PECs are well below the relevant EQSs, so the impact on local air quality from emissions from the SEP at the long-term emission limits remains acceptable.

Conclusion

- 16. The results from the models with the proposed updated site layout do not vary significantly from those in the original ES. There are some slight increases and decreases in process contributions, but the descriptors of the magnitude of the PCs and the significance descriptors remain the same as in the original assessment. In addition, the PECs are all still well below the relevant EQSs.
- 17. It is therefore concluded that the proposed change in site layout will not alter the conclusion of the original Air Quality ES chapter and the proposed SEP is acceptable from an air quality perspective.



Figure 1 – Site Layouts

Previous (green) and proposed (red) site layout plans showing amended building layout and stack location

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Chapter 7: Air and Climate



Annex A – Results from Original ES Chapter

Table Error! No text of specified style in document1: Maximum Process Concentration (µg.m ⁻³) at									
Short-Term EU Directive Emission Limits									
Pollutant	Pollutant Averaging Period EQS Max PC Max PC as % of EQS Magnitude of PC								
NO ₂	1 hour 99.79th percentile	200	28.5	14.2	Small				
50.	15 minute 99.9th percentile	266	43.6	16.3	Small				
50_2	1 hour 99.73rd percentile	350	42.7	12.2	Small				
HCI	1 hour maximum	750	12.9	1.7	Very Small				
HF	1 hour maximum	160	0.8	0.5	Very Small				

Table Error! No text of specified style in document2: Maximum Environmental Contributions (µg.m ⁻ ³) at Short-Term EU Directive Emission Limits								
Pollutant	Averaging Period	EQS	AC	Max PEC	Max PEC as % of EQS	Significance Descriptor		
NO ₂	1 hour 99.79th percentile	200	42.6	71.1	35.5	Slight Adverse		
50	15 minute 99.9th percentile	266	4.0	20.3	7.6	Slight Adverse		
SO_2	1 hour 99.73rd percentile	350	4.0	44.6	12.7	Slight Adverse		
HCI	1 hour maximum	750	0.6	2.3	0.3	Negligible		
HF	1 hour maximum	160	4.9	5.7	3.5	Negligible		

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Table Error! No text of specified style in document3: Predicted Maximum Process Contributions (µg.m ⁻³) at Long-Term EU Directive Emission Limits ADMS Modelling							
Pollutant	Averaging Period	EQS	Max PC	Max PC as % of EQS	Magnitude of PC		
PM ₁₀	24 hour (90.41st percentile)	50	0.62	1.2	Very Small		
	Annual	40	0.15	Predicted Maximum Process Contribue Emission Limits ADMS Modelling ax PC Max PC as % of EQS Ma 0.62 1.2 0.15 0.4 0.15 0.15 0.14 0.15	Very Small		
	1 hour (maximum)	750	2.15	Fredicted Maximum Process Contritive Emission Limits ADMS Modelling Vax PC Max PC as % of EQS N 0.62 1.2 0.15 0.4 2.15 0.3 0.15 0.8 0.22 0.1 9.0 3.4 10.1 2.9 7.2 5.8 0.7 1.4 14.3 7.2 2.10 5.3 9.82 0.1 0.75 0.2 5.3 9.82 0.1 0.75 0.75 0.2 5.39×10^3 3.982 0.1 0.75 0.75 0.2 0.376×10^4 3.76×10^4 7.5 5.39×10^{-3} 3.76×10^{-4} 0.0 5.35×10^{-4} 3.20×10^{-2} 0.1 7.5×10^{-2} 3.35×10^{-4} 0.0 5.26×10^{-3} 3.66×10^{-3} 0.0 5.26×10^{-3} 3.66×10^{-2} 0.2 5.35×10^{-4} 3.66×10^{-2} 0.0 5.35×10^{-4} 1.20×10^{-2} 0	Very Small		
HCI	Annual	20	0.15	0.8	Very Small		
HF	1 hour (maximum)	160	0.22	0.1	Very Small		
	15 minute (99.90th percentile)	266	9.0	3.4	Very Small		
SO ₂	1 hour (99.73rd percentile)	350	10.1	2.9	Very Small		
	24 hour (99.18th percentile)	125	7.2	5.8	Very Small		
	Annual	50	0.7	10.1 2.9 7.2 5.8 0.7 1.4 14.3 7.2 2.10 5.3 9.82 0.1 0.75 0.2 3.9×10^{-3} 0.4 0.76×10^{-4} 7.5 3.39×10^{-3} 0.0 0.76×10^{-4} 0.0 0.76×10^{-4} 0.0 0.8×10^{-2} 0.1 0.51×10^{-4} 0.3 $.20 \times 10^{-2}$ 0.0 0.35×10^{-4} 0.0 0.26×10^{-3} 0.0 0.666×10^{-4} 0.2	Small		
NO ₂	1 hour (99.79th percentile)	200	14.3	7.2	Very Small		
	Annual	40	2.10	5.3	Small		
со	8 hour (maximum daily running)	10,000	9.82	0.1	Very Small		
	Annual	350	0.75	0.2	Very Small		
Cd	1 hour (maximum)	1.5	5.39 x 10 ⁻³	0.4	Very Small		
	Annual	0.005	3.76 x 10 ⁻⁴	7.5	Medium		
Ti	1 hour (maximum)	30	5.39 x 10 ⁻³	0.0	Very Small		
	Annual	1	3.76 x 10 ⁻⁴	0.0	Very Small		
Ha	1 hour (maximum)	7.5	1.08 x 10 ⁻²	0.1	Very Small		
T Ig	Annual	0.25	7.51 x 10 ⁻⁴	0.3	Very Small		
Sh	1 hour (maximum)	150	1.20 x 10 ⁻²	0.0	Very Small		
	Annual	5		Very Small			
As	1 hour (maximum)	15	5.26 x 10 ⁻³	0.0	Very Small		
//0	Annual	0.2	3.66 x 10 ⁻⁴	0.2	Very Small		
Cr	1 hour (maximum)	3	2.64 x 10 ⁻²	0.9	Very Small		
•	Annual	0.1	1.84 x 10 ⁻³	1.8	Very Small		
Со	1 hour (maximum)	6	1.20 x 10 ⁻²	0.2	Very Small		
	Annual	0.2	8.35 x 10 ⁻⁴	0.4	Very Small		
Cu	1 hour (maximum)	60	1.15×10^{-4}	0.0	Very Small		
	Annual	2	8.04 x 10	0.0	Very Small		
Pb	Annual	0.5	2.63×10^{-3}	0.5	Very Small		
Mn		1500	1.20 X 10	0.0	Very Small		
	Annual	20	0.35×10^{-2}	0.1	Very Small		
Ni		30	2.00×10	0.1	Very Small		
	Annual	5	1.07×10^{-2}	0.2	Very Silidii		
V		1	1.20×10^{-4}	0.2	Very Small		
Diovine & Eurane	Δηριμαί		1.50×10^{-9}	0.1	very Sinali		
	1 hour (maximum)	2500	1.00 × 10	- 0.0	- Very Small		
Ammonia	Annual	180	0.08	0.0	Very Small		
PAHs (B[a]P)	Annual	0.00025	1 53 x 10 ⁻⁵	6.0	Medium		
PCBs	Annual	0.2	7.54 x 10 ⁻⁵	0.0	Very Small		

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Pollutant Averaging Period EQS AC Max PEC Max Max PEC as % of EQS Significance bescriptor PM10 24 hour (90.411 50 28.3 28.9 57.8 Silgnificance bescriptor Hour (maximum) 750 0.6 27.5 0.4 Negligible HCI 1hour (maximum) 750 0.6 2.75 0.4 Negligible HF 1hour (maximum) 160 4.92 5.14 3.2 Negligible MI1 1hour (maximum) 160 4.92 5.14 3.2 Negligible MI1 1hour (199.73rd 350 4.0 14.1 4.0 Negligible MI1 1hour (199.73rd 350 2.0 2.7 5.4 Slight Adverse MI1 Percentile) 200 42.6 56.9 28.5 Negligible Annual 350 0.27 10.2 0.3 Negligible Annual 0.00 5401 54.1 Slight Adverse Annual	Table Error! No text of specified style in document4: Predicted Environmental Quality Standard (µg.m ⁻³) at Long-Term EU Directive Emission Limits ADMS Modelling							
PM10 24 hour (90.41st Annual 50 28.3 28.9 57.8 Slight Adverse HCI Inour (maximum) 750 0.6 2.75 0.4 Megligible HF I hour (maximum) 120 0.3 0.45 2.3 Megligible HF I hour (maximum) 180 4.92 5.14 3.2 Megligible SO2 1 hour (maximum) 180 4.92 5.14 3.2 Megligible Annual 160 9.05 4.0 113 4.9 Megligible Precentile) 286 4.0 114.1 4.0 Megligible Annual 50 2.0 2.7 5.4 Slight Adverse Annual 40 21.3 23.4 58.5 Slight Adverse Annual 10.00 5400 5410 54.1 Slight Adverse Annual 0.005 0.2.7 1.02 0.3 Megligible Co Annual 0.01 54.1 Sligh	Pollutant	Averaging Period	EQS	AC	Max PEC	Max PEC as % of EQS	Significance Descriptor	
Annual 40 28.3 28.45 71.1 Negligibe HCI Annual 20 0.6 2.75 0.4 Negligibe HF 1 hour (maximum) 160 4.92 5.14 3.2 Negligibe MF 1 hour (maximum) 160 4.92 5.14 3.2 Negligibe MF 1 hour (maximum) 160 4.92 5.14 3.2 Negligibe MF 1 hour (maximum) 266 4.0 113 4.9 Negligibe Percentile) 24 50 2.0 2.7 5.4 Slight Adverse Annual 40 21.3 23.4 58.5 Slight Adverse Annual 40 21.3 23.4 58.5 Slight Adverse Annual 10.00 5400 5410 54.1 Slight Adverse Annual 0.005 0.2 x 10.3 5.6 x 10.4 11.5 Slight Adverse Manual 0.005 0.2 x 10.3 5.6 x 10.4 1	PM ₁₀	24 hour (90.41st percentile)	50	28.3	28.9	57.8	Slight Adverse	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Annual	40	28.3	28.45	71.1	Negligible	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		1 hour (maximum)	750	0.6	2.75	0.4	Negligible	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Annual	20	0.3	0.45	2.3	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	HF	1 hour (maximum)	160	4.92	5.14	3.2	Negligible	
SO2 1 hour (99.13th percentile) 350 4.0 14.1 4.0 Negligible 24 hour (99.18th percentile) 125 4.0 11.2 9.0 Negligible Annual 50 2.0 2.7 5.4 Slight Adverse NO2 1 hour (99.79th percentile) 200 42.6 56.9 28.5 Negligible Annual 40 21.3 23.4 58.5 Slight Adverse CO 8 hour (maximum) 15.0 0.27 1.02 0.3 Negligible Annual 0.005 0.24 rtl 03 5.76 x 10 ⁴ 14.5 Negligible Cd 1 hour (maximum) 350 0.27 1.02 0.3 Negligible Ti Annual 0.005 0.24 rtl 3 5.76 x 10 ⁴ 14.5 Slight Adverse Ti hour (maximum) 30 0.22 x 10 ³ 5.76 x 10 ⁴ 11.5 Slight Adverse Ti hour (maximum) 30 0.22 x 10 ³ 5.76 x 10 ⁴ 0.1 Negligible </td <td></td> <td>15 minute (99.90th percentile)</td> <td>266</td> <td>4.0</td> <td>13</td> <td>4.9</td> <td>Negligible</td>		15 minute (99.90th percentile)	266	4.0	13	4.9	Negligible	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	SO ₂	1 hour (99.73rd percentile)	350	4.0	14.1	4.0	Negligible	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		24 hour (99.18th percentile)	125	4.0	11.2	9.0	Negligible	
		Annual	50	2.0	2.7	5.4	Slight Adverse	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	NO ₂	1 hour (99.79th percentile)	200	42.6	56.9	28.5	Negligible	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Annual	40	21.3	23.4	58.5	Slight Adverse	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	со	8 hour (maximum daily running)	10,000	5400	5410	54.1	Slight Adverse	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Annual	350	0.27	1.02	0.3	Negligible	
$ \begin{array}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Cd	1 hour (maximum)	1.5	0.4 x 10 ⁻³	5.79 x 10 ⁻³	0.4	Negligible	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Cu	Annual	0.005	0.2 x 10 ⁻³	5.76 x 10 ⁻⁴	11.5	Slight Adverse	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Ті	1 hour (maximum)	30	0.02 x 10 ⁻³	5.41 x 10 ⁻³	0.0	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Annual	1	0.01 x 10 ⁻³	3.86 x 10 ⁻⁴	0.0	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	На	1 hour (maximum)	7.5	0.1 x 10 ⁻³	1.09 x 10 ⁻²	0.1	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Annual	0.25	0.2 x 10 ⁻³	9.51 x 10 ⁻⁴	0.4	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Sb	1 hour (maximum)	150	2.8 x 10 ⁻³	1.48 x 10 ⁻²	0.0	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	SD	Annual	5	1.4 x 10 ⁻³	2.24 x 10 ⁻³	0.0	Negligible	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	As	1 hour (maximum)	15	2.0 x 10 ⁻³	7.26 x 10 ⁻³	0.0	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	A3	Annual	0.2	1.0×10^{-3}	1.3/ x 10 ⁻⁵	0.7	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Cr	1 hour (maximum)	3	2.3 x 10 ⁻³	2.8/ x 10 ⁻²	1.0	Negligible	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Annual	0.1	4.6 x 10°	6.44 x 10°	6.4	Negligible	
Annual 0.2 0.1×10^{-5} 9.35×10^{-1} 0.5 NegligibleCu1 hour (maximum) 60 10.0×10^{-3} 2.15×10^{-2} 0.0 NegligiblePbAnnual2 5.0×10^{-3} 5.80×10^{-3} 0.3 NegligiblePbAnnual 0.5 15×10^{-3} 1.76×10^{-2} 3.5 NegligibleMn1 hour (maximum) 1500 6.7×10^{-3} 1.87×10^{-2} 0.0 NegligibleMn1 hour (maximum) 1500 6.7×10^{-3} 1.87×10^{-2} 0.0 NegligibleNi1 hour (maximum) 30 6.4×10^{-3} 1.42×10^{-2} 1.4 NegligibleNi1 hour (maximum) 30 6.4×10^{-3} 3.32×10^{-2} 0.1 NegligibleV1 hour (maximum) 5 14.8×10^{-3} 2.68×10^{-2} 0.5 NegligibleV1 hour (maximum) 5 14.8×10^{-3} 2.68×10^{-2} 0.5 NegligibleDioxins & FuransAnnual 1 7.4×10^{-3} 8.24×10^{-3} 0.8 NegligibleAmmoniaAnnual $ 6.0 \times 10^{-3}$ 6.15×10^{-8} $ -$ PAHs (B[a]P)Annual 180 1.1 1.2 0.7 NegligiblePCBsAnnual 0.2 1.10×10^{-6} 7.65×10^{-5} 0.0 Negligible	Со	1 hour (maximum)	6	0.2 x 10 °	1.22 x 10 ⁻²	0.2	Negligible	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Annual	0.2	0.1×10^{-3}	9.35×10^{-1}	0.5	Negligible	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Cu	1 nour (maximum)	60	10.0×10^{-3}	2.15×10^{-3}	0.0	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Annual	2	5.0 X 10 ⁻²	5.80 X 10 ⁻²	0.3	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Pb	Annual	0.5	15 x 10⁻°	1.76 x 10 ⁻²	3.5	Negligible	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Mn	1 hour (maximum)	1500	6.7 x 10 ⁻³	1.87 x 10 ⁻²	0.0	Negligible	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	10111	Annual	1	13.4 x 10 ⁻³	1.42 x 10 ⁻²	1.4	Negligible	
Annual 1 3.2×10^{-3} 5.07×10^{-3} 0.5 Negligible V 1 hour (maximum) 5 14.8×10^{-3} 2.68×10^{-2} 0.5 Negligible Dioxins & Furans Annual 1 7.4×10^{-3} 8.24×10^{-3} 0.8 Negligible Dioxins & Furans Annual - 6.0×10^{-3} 6.15×10^{-8} - - Ammonia 1 hour (maximum) 2500 2.2 3.3 0.1 Negligible PAHs (B[a]P) Annual 180 1.1 1.2 0.7 Negligible PCBs Annual 0.2 110×10^{-6} 7.65×10^{-5} 0.0 Negligible	Ni	1 hour (maximum)	30	6.4 x 10 ⁻³	3.32 x 10 ⁻²	0.1	Negligible	
V 1 hour (maximum) 5 14.8 x 10 ⁻³ 2.68 x 10 ⁻² 0.5 Negligible Annual 1 7.4×10^{-3} 8.24×10^{-3} 0.8 Negligible Dioxins & Furans Annual - 6.0×10^{-3} 6.15×10^{-8} - - Ammonia 1 hour (maximum) 2500 2.2 3.3 0.1 Negligible PAHs (B[a]P) Annual 180 1.1 1.2 0.7 Negligible PCBs Annual 0.2 1.0×10^{-5} 7.65×10^{-5} 0.0 Negligible		Annual	1	3.2 x 10 ⁻³	5.07 x 10 ⁻³	0.5	Negligible	
Annual 1 7.4 x 10 ⁻³ 8.24 x 10 ⁻³ 0.8 Negligible Dioxins & Furans Annual - $6.0 x 10^{-3}$ $6.15 x 10^{-8}$ - - Ammonia 1 hour (maximum) 2500 2.2 3.3 0.1 Negligible PAHs (B[a]P) Annual 180 1.1 1.2 0.7 Negligible PCBs Annual 0.2 1 10 x 10 ⁻⁶ 7 65 x 10 ⁻⁵ 0.0 Negligible	V	1 hour (maximum)	5	14.8 x 10 ⁻³	2.68 x 10 ⁻²	0.5	Negligible	
Dioxins & Furans Annual - 6.0 x 10 ⁻⁵ 6.15 x 10 ⁻⁶ - - <td>•</td> <td>Annual</td> <td>1</td> <td>7.4 x 10⁻³</td> <td>8.24 x 10⁻³</td> <td>0.8</td> <td>Negligible</td>	•	Annual	1	7.4 x 10 ⁻³	8.24 x 10 ⁻³	0.8	Negligible	
Ammonia 1 hour (maximum) 2500 2.2 3.3 0.1 Negligible Annual 180 1.1 1.2 0.7 Negligible PAHs (B[a]P) Annual 0.00025 9.0 x 10 ⁻⁵ 1.05 x 10 ⁻⁴ 42.1 Slight Adverse PCBs Annual 0.2 1 10 x 10 ⁻⁶ 7 65 x 10 ⁻⁵ 0.0 Negligible	Dioxins & Furans	Annual	-	6.0 x 10 ⁻³	6.15 x 10 ⁻⁸	-	-	
Annual 180 1.1 1.2 0.7 Negligible PAHs (B[a]P) Annual 0.00025 9.0 x 10 ⁻⁵ 1.05 x 10 ⁻⁴ 42.1 Slight Adverse PCBs Annual 0.2 1.10 x 10 ⁻⁶ 7.65 x 10 ⁻⁵ 0.0 Negligible	Ammonia	1 hour (maximum)	2500	2.2	3.3	0.1	Negligible	
PCBs Annual 0.2 1.0×10^{-6} 7.65 $\times 10^{-5}$ 0.0 Negligible		Annual	0.00025	1.1	1.2	0.7		
		Annual	0.2	1.10×10^{-6}	7.65×10^{-5}	0.0	Negligible	