Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2015

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Submarine pipeline Submarine cable	Heavy construction Source ID: Q1: Q2: Q3: S1, S2, S3 Q4: S1, S2, S3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: Q2: Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, TRD2, TCPN-1, TCPN-2, TCPN-3, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q2: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q3: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q4: EM1, EM2, ITT1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q3: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) Boundary Crossing Facilities (BCF)	Heavy construction Source ID: Q1: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q2: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q3: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q4: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 87.5 % 26 days 12 hour 0.0807 Mg/hectare/month of activity 7.18483E-06 g/m²/s (unmitigated) 8.98104E-07 g/m²/s (mitigated)	Assume 100% works area for heavy construction Extracted from HKBCF EIA Extracted from HKBCF EIA Extracted from HKBCF EIA AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) Hong Kong Link Road (HKLR)	Heavy construction Source ID: Q1: LR-2, LR-3, LR-4, LR-5, LR-6, LR-7, LR-8, LR-9, LR-10, LR-11, LR-12, LR-13, LR-14 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 87.5 % 26 days 12 hour 0.0807 Mg/hectare/month of activity 7.18483E-06 g/m²/s (unmitigated) 8.98104E-07 g/m²/s (mitigated)	Assume 100% works area for heavy construction Extracted from HKLR EIA Extracted from HKLR EIA Extracted from HKLR EIA AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2016

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4: 1_03-1, 1_03-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Submarine pipeline Submarine cable	Heavy construction Source ID: Q1: S1, S2, S3 Q2: S1, S2, S3 Q3: S1, S2, S3 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q2: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: AES6, EM1, EM2, ITT1 Q2: AES6, EM1, EM2, ITT1 Q3: AES6, EM1, EM2, ITT1 Q4: AES6, EM1, EM2, ITT1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2016

Project	Source	Parameter	Value	Notes / Reference
(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q3: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q4: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.00 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Advanced Works (Temporary Car Parks NCD and Temporary Road Diversion)	Heavy construction Source ID: Q1: TRD1, TRD3, TRD4, TRD5, TRD6 Q2: TRD1, TRD5, TRD6 Q3: TRD1, TRD5, TRD6 Q4:	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) Boundary Crossing Facilities (BCF)	Heavy construction Source ID: Q1: BCF-C4 Q2: BCF-C4 Q3: BCF-C4 Q4: BCF-C4	Percentage active area, p	100.0 %	Assume 100% works area for heavy construction
		Mitigation efficiency	87.5 %	Extracted from HKBCF EIA
		No. of working days per month, d	26 days	Extracted from HKBCF EIA
		No. of working hours per day, h	12 hour	Extracted from HKBCF EIA
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	7.18483E-06 g/m²/s (unmitigated) 8.98104E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-1 Q2: ABT1-1 Q3: ABT1-1 Q4: ABT1-1	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Roadworks corresponding to Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-2, ABT1-3 Q2: ABT1-2, ABT1-3 Q3: ABT1-2, ABT1-3 Q4: ABT1-2, ABT1-3	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2017

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 1_01, 1_03-1, 1_03-2, 1_04, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 1_09-1, 1_09-2, 2_03B, 2_04-1, 2_04-2, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07B, 2_08, 2_09-1, 2_09-2 Q2: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 1_09-1, 1_09-2, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-1, 2_09-2, 3_01A-1, 3_01A-2, 3_01A-3 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 3_01A-1, 3_01A-2, 3_01A-3 Q4: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: Q2: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3 Q3: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2 Q4: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3	Percentage active area, p	100.0 %	
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	12 (night) hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	6.22685E-06 g/m²/s (unmitigated) 5.16829E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: Q2: Q3: Q4: 1_08B-1, 1_08B-2, 3_01A-1, 3_01A-2, 3_01A-3	Percentage active area, p	20.0 %	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	
		Emission Rate	1.6172E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 4_04, 4_05-1 Q2: 4_04, 4_05-1 Q3: 4_04, 4_05-1 Q4: 4_04, 4_05-1	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q2: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2017

(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: AES6 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 Assume road width equals 12m, therefore multiply emission rate by 12. =2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 Assume road width equals 12m, therefore multiply emission rate by 12. =2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.89178E-06 g/m²/s (unmitigated) 3.23018E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.89178E-06 g/m²/s (unmitigated) 3.23018E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2017

Area	Source	Parameter	Value	Notes
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: Q2: Q3: AIS1, AIS2 Q4:	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p	100.00 %	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: Q2: Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1, BAT2, NAB3, NAB4	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p	100.00 %	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: Q2: Q3: T2E-1, T2E-2, T2E-3, BHS1, BHS2, NAB1, NAB2, SAB, NAD1 Q4: T2E-1, T2E-2, T2E-3, AIS1, AIS2, BHS1, BHS2, NAB1, NAB2, SAB, NAD1, EVA1, EVA2, EVA3, EVA4, EVA5, EVA6, EVA7, EVA8, EVA9	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Emergency Vehicular Access (EVA)	Heavy construction Source ID: Q1: Q2: Q3: EVA1, EVA2, EVA3, EVA4, EVA5, EVA6, EVA7, EVA8, EVA9 Q4:	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-1 Q2: ABT1-1 Q3: ABT1-1 Q4: ABT1-1	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Roadworks corresponding to Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-2, ABT1-3 Q2: ABT1-2, ABT1-3 Q3: ABT1-2, ABT1-3 Q4: ABT1-2, ABT1-3	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	Assume road width equals 12m, therefore multiply emission rate
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2018

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_08B-2, 2_02B-1, 2_02B-2, 2_03A, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2 Q2: 1_02-1, 1_02-2, 1_05, 1_06-1, 1_06-2, 2_02B-1, 2_02B-2, 2_03A, 2_05A, 2_08, 3_02B Q3: 1_06-1, 1_06-2, 2_01, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05B-1, 2_05B-2	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3 Q2: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_01A-1, 3_01A-2, 3_01A-3, 3_02A-1, 3_02A-2, 3_02A-3 Q3: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_01A-1, 3_01A-2, 3_01A-3, 3_02A-1, 3_02A-2, 3_02A-3 Q4: 1_09-1, 1_09-2, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3	Percentage active area, p	100.0 %	
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	12 (night) hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	6.22685E-06 g/m²/s (unmitigated) 5.16829E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 1_07-2, 1_08A-2, 2_03B, 2_07B, 2_08, 3_01A-1, 3_01A-2, 3_01A-3 Q2: 1_01, 1_03-1, 1_03-2, 1_04, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B Q3: 1_09-1, 1_09-2, 2_08, 3_02B Q4: 2_04-1, 2_04-2, 2_05A, 2_06-1, 2_06-2, 2_06-3, 2_08, 3_02B	Percentage active area, p	20.0 %	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4
		Emission Factor (0.03)	0.0255 Mg/hectare/year	Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	1.6172E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_07-1, 1_08A-1, 1_08B-1, 4_04, 4_05-1 Q2: 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 4_04, 4_05-1 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_07A-1, 2_07A-2, 2_07B, 4_04, 4_05-1 Q4: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_04, 4_05-1	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q2: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q3: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q4: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2018

Location	Source	Parameter	Value	Notes
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p	100.0 %	Assume % works area for heavy construction. Water suppression 12 times a day. Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	$=2.69*0.03*1000000/(10000*d*h*60*60)*p/100$
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	$=0.85*0.03*1000000/(10000*365*24*60*60)*p/100$
		Emission Rate	8.086E-08 g/m²/s	
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: CA1, CA2 Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p	100.00 %	Assume % works area for heavy construction. Water suppression 12 times a day. Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005. Assume road width equals 12m, therefore multiply emission rate by 12m.
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	$=2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12$
		Emission Rate	3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.00 %	AP42, Table 11.9-4. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	$=0.85*0.03*1000000/(10000*365*24*60*60)*p/100$
		Emission Rate	8.086E-08 g/m²/s	
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: CA3, CA4, CA5, CA6, CA7, CA8 Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p	100.0 %	Assume % works area for heavy construction. Water suppression 12 times a day. Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005. Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works)
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	
		Emission Rate	3.89178E-06 g/m²/s (unmitigated) 3.23018E-07 g/m²/s (mitigated)	$'=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5$
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	$=0.85*1000000/(10000*365*24*60*60)*p/100$
		Emission Rate	8.086E-08 g/m²/s	
Roadworks Road 6 viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p	100.0 %	Assume % works area for heavy construction. Water suppression 12 times a day. Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005. Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works)
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	
		Emission Rate	3.89178E-06 g/m²/s (unmitigated) 3.23018E-07 g/m²/s (mitigated)	$'=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5$
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	$=0.85*0.03*1000000/(10000*365*24*60*60)*p/100$
		Emission Rate	8.086E-08 g/m²/s	
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: Q2: AIS1, AIS2, EVA6, EVA7, EVA8 Q3: AIS1, AIS2, EVA6, EVA7, EVA8 Q4: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p	100.00 %	Assume % works area for heavy construction. Water suppression 12 times a day. Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	$=2.69*0.03*1000000/(10000*d*h*60*60)*p/100$
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p	100.00 %	AP42, Table 11.9-4. Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Factor (0.03)	0.0255 Mg/hectare/year	$=0.85*0.03*1000000/(10000*365*24*60*60)*p/100$
		Emission Rate	8.086E-08 g/m²/s	

Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: Q2: BHS1, BHS2, EVA9 Q3: BHS1, BHS2, EVA9 Q4: BHS1, BHS2, EVA9	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD1, NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4: NAD1, NAD2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: NAD1, NAD2	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1, BAT2, NAB3, NAB4 Q2: BAT1, BAT2, NAB3, NAB4 Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1, BAT2, NAB3, NAB4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1, BAT2, NAB3, NAB4	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: T2E-1, T2E-2, T2E-3, AIS1, AIS2, BHS2 Q2: T2E-3 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Car Park North (North Annex Building)	Heavy construction Source ID: Q1: NAB1, NAB2, BHS1 Q2: NAB1, NAB2 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Lounge Limo (South Annex Building)	Heavy construction Source ID: Q1: SAB Q2: SAB Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2019

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 2_01, 2_02A Q2: 2_01, 2_02A, 2_05A Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_05A Q4: 2_02B-1, 2_02B-2, 2_03A	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: 1_09-1, 1_09-2, 2_06-1, 2_06-2, 2_06-3, 3_02A-1, 3_02A-2, 3_02A-3 Q2: 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 3_02A-1, 3_02A-2, 3_02A-3 Q3: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 3_02A-1, 3_02A-2, 3_02A-3 Q4: 2_09-1	Percentage active area, p	100.0 %	
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	12 (night) hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	6.22685E-06 g/m²/s (unmitigated) 5.16829E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 2_02B-1, 2_03A, 2_03B, 2_04-1, 2_04-2, 2_05A, 2_05B-1, 2_05B-2, 2_08, 2_09-1, 2_09-2, 3_02B Q2: 2_02B-1, 2_03A, 2_03B, 2_05B-1, 2_05B-2, 3_02B Q3: 1_09-2, 3_02B Q4: 3_02A-1, 3_02A-3, 3_02B	Percentage active area, p	20.0 %	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20%
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	1.6172E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_07-1, 1_08A-1, 1_08B-1, 2_02B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 4_04 Q2: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_09-1, 2_02B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_09-1, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04 Q4: 1_09-1, 1_09-2, 2_01, 2_02A, 2_03B, 2_04-1, 2_04-2, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2019

South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: CA1, CA2 Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.00 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: CA3, CA4, CA5, CA6, CA7, CA8 Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.89178E-06 g/m²/s (unmitigated) 3.23018E-07 g/m²/s (mitigated)	Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.89178E-06 g/m²/s (unmitigated) 3.23018E-07 g/m²/s (mitigated)	Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: AIS1, AIS2, EVA6, EVA7, EVA8 Q2: Q3: Q4:	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p	100.00 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2019

Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: BHS1, BHS2, EVA9 Q2: Q3: Q4: BHS1, BHS2, EVA9	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BHS1, BHS2, EVA9	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD1, NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4: NAD2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: NAD1, NAD2	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1, BAT2, NAB3, NAB4 Q2: BAT1, BAT2, NAB3, NAB4 Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1, BAT2, NAB3, NAB4	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: Q2: Q3: Q4: AIS1, AIS2, NAB1, NAB2, NAB3, NAB4, BAT2, NAD1, EVA6, EVA7, EVA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2020

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: Q2: 3_02A-1, 3_02A-2, 3_02A-3 Q3: 3_02A-1, 3_02A-2, 3_02A-3 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 12 (night) hour 0.0807 Mg/hectare/month of activity 6.22685E-06 g/m²/s (unmitigated) 5.16829E-07 g/m²/s (mitigated)	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 2_09-1, 3_02A-1, 3_02A-2, 3_02A-3, 3_02B Q2: 2_09-1, 3_02B Q3: 2_09-1, 3_02B Q4: 3_02A-1, 3_02B	Percentage active area, p Emission Factor (0.03) Emission Rate	20.0 % 0.0255 Mg/hectare/year 1.6172E-08 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q2: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q3: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_09-1, 3_02A-2, 3_02A-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2020

Western Support Area Emergency Access Road (flyover)	Heavy construction Source ID: Q1: WSA1, WSA2, WSA3, WSA4 Q2: WSA1, WSA2, WSA3, WSA4 Q3: WSA1, WSA2, WSA3, WSA4 Q4: WSA1, WSA2, WSA3, WSA4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.89178E-06 g/m²/s (unmitigated) 3.23018E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*1000000/(10000*365*24*60*60)*p/100
Western Support Area Emergency Access Road (at grade)	Heavy construction Source ID: Q1: WSA5 Q2: WSA5 Q3: WSA5 Q4: WSA5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.73611E-05 g/m²/s (unmitigated) 3.10097E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: AIS1, AIS2, EVA6, EVA7, EVA8 Q2: AIS1, AIS2, EVA6, EVA7, EVA8 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: BHS1, BHS2, EVA9 Q2: BHS1, BHS2, EVA9 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BHS1, BHS2, EVA9	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2020

New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: NAD2	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1 Q2: BAT1, BAT2, NAB3, NAB4 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1	Percentage active area, p Emission Factor (0.03) Emission Rate	100.00 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: NAB1, NAB2, NAB3, NAB4, BAT2, NAD1 Q2: NAB1, NAB2 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2021

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4: 3_01B-1, 3_01B-2	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 3_02A-1, 3_02B Q2: 3_02A-1, 3_02B Q3: 3_02A-1, 3_02B Q4: 3_02A-1, 3_02B	Percentage active area, p	20.0 %	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20%
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	1.6172E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_09-1, 3_02A-2, 3_02A-3 Q2: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_01-1, 4_01-2, 4_01-3, 4_05-1 Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 3_01B-1, 3_01B-2, 4_01-1, 4_01-2, 4_01-3, 4_05-1 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_01-1, 4_01-2, 4_01-3, 4_03-1, 4_03-2, 4_05-1	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Airside tunnels (AT)	Heavy construction Source ID: Q1: Q2: AT1, AT3 Q3: AT1, AT3 Q4: AT1, AT2, AT3	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	=2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2021

South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: Q2: Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p	100.00 %	Assume % works area for heavy construction
				Water suppression 12 times a day
		Mitigation efficiency	91.7 %	Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.73611E-05 g/m²/s (unmitigated)	Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.03*1000000/(10000*d*h*60*60)*p/100 * 12
			3.10097E-06 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.00 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: Q2: Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p	100.0 %	Assume % works area for heavy construction
				Water suppression 12 times a day
		Mitigation efficiency	91.7 %	Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.89178E-06 g/m²/s (unmitigated)	Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
			3.23018E-07 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: Q2: Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p	100.0 %	Assume % works area for heavy construction
				Water suppression 12 times a day
		Mitigation efficiency	91.7 %	Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.03)	0.0807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	3.89178E-06 g/m²/s (unmitigated)	Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.03*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
			3.23018E-07 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005
		Emission Rate	8.086E-08 g/m²/s	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.6 - Details of Dust Emission Sources for Daily FSP Assessment (Tier 1) at Year 2022

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 3_02B Q2: Q3: Q4: 3_02B	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 3_02A-1 Q2: 3_02A-1 Q3: 3_02B Q4:	Percentage active area, p Emission Factor (0.03) Emission Rate	20.0 % 0.0255 Mg/hectare/year 1.6172E-08 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_01-1, 4_01-2, 4_01-3, 4_03-1, 4_03-2, 4_05-1 Q2: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-3, 3_02B, 4_03-1, 4_03-2, 4_05-1 Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_02A-1, 4_05-1 Q4: 2_01, 2_02A, 2_02B-1, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 4_05-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100
Airside tunnels (AT)	Heavy construction Source ID: Q1: AT1, AT2, AT3 Q2: AT2, AT3 Q3: AT3 Q4: AT3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.03) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.0807 Mg/hectare/month of activity 3.11343E-06 g/m²/s (unmitigated) 2.58414E-07 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =2.69*0.03*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.03) Emission Rate	100.0 % 0.0255 Mg/hectare/year 8.086E-08 g/m²/s	AP42, Table 11.9-4 Thompson G. Pace, USEPA. Examination of the Multiplier Used to Estimate PM2.5 Fugitive Dust Emissions from PM10, April 2005 =0.85*0.03*1000000/(10000*365*24*60*60)*p/100

Description	Sources	Parameter	Emission Rate		Remarks
Barging Point	Unloading of spoils to barge Source ID: TBP1-6	Particle size multiplier, k	0.053		For FSP, AP-42, section 13.2.4, 11/06 ed.
		Moisture content, M	5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Mean wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.66E-05	kg/Mg	$E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.)
		No. of operation hour	12	hr	26 days per month
		Maximum handling capcity for each barging point	47000	Mg/day	From engineer
			2.61E-01	kg/hr (Asphalt)	Assume 12 working hours (7:00 - 19:00) per day
		Emission height	0.5	m	
		Mitigation efficiency	90	%	Installation of flexible curtain and shelter with water spray at discharge point
		Emission Rate	7.24E-03	g/s (mitigated)	
Concrete Batching Plant	Paved haul road outside concrete batching plant - For **Laden** Vehicle Source ID: WAB-HR1 to WAB-HR13 WAB-P4-HR1 to WAB-P4-HR10 WC-HR1 to WC-HR13 WC-P4-HR1 to WC-P4-HR10 EAB-HR1 to EAB-HR4 EAC-HR1 to EAC-HR4 EC-HR1 to EC-HR14 EC-P2-HR1 to EC-P2-HR7	Particle size multiplier, k	0.15	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	28.3	tons	Full loading of Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		FSP emission factor, E			$E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			44	g/VKT	Asphalt Tipper
		No. of truck trips per day	96	trips/hr	From engineer, Asphalt Tipper Lorries in Asphalt Plant
			140	trips/hr	From Enginner, Asphalt Tipper Lorries in Concrete Batching Plant
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	2.90E-05	g/m/s (mitigated)	Asphalt Tipper Lorries in Asphalt Plant
			4.23E-05	g/m/s (mitigated)	Asphalt Tipper Lorries in Concrete Batching Plant
Concrete Batching Plant	Paved haul road outside concrete batching plant - For **Unladen** Vehicle Source ID: WAB-HR1 to WAB-HR13 WAB-P4-HR1 to WAB-P4-HR10 WC-HR1 to WC-HR13 WC-P4-HR1 to WC-P4-HR10 EAB-HR1 to EAB-HR4 EAC-HR1 to EAC-HR4 EC-HR1 to EC-HR14 EC-P2-HR1 to EC-P2-HR7	Particle size multiplier, k	0.15	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	8.24	tons	Empty loading of Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		FSP emission factor, E			$E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			12	g/VKT	Asphalt Tipper
		No. of truck trips per day	30	trips/hr	From engineer, Asphalt Tipper Lorries in Asphalt Plant
			140	trips/hr	From Enginner, Asphalt Tipper Lorries in Concrete Batching Plant
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	2.6E-06	g/m/s (mitigated)	Asphalt Tipper Lorries in Asphalt Plant
			1.20E-05	g/m/s (mitigated)	Asphalt Tipper Lorries in Concrete Batching Plant
Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: (EP9) WAB-EP9, WAB-P4-EP9, WC-EP9, WC-P4-EP9 EAB-EP9, EC-EP9, EC-2-EP9, EC-3-EP9, EC-P2-EP9	Consumption Rate (Western + Eastern)	300	Mg/h (Asphalt)	From engineer: Asphalt: 300 ton/hr = 150 ton/hr x 2 plants
			2000	Mg/h (Concrete)	From engineer: Concrete: 2000 ton/hr = 500 ton/hr x4 plants
		Consumption Rate (Western only)	150	Mg/h (Asphalt)	From engineer: Asphalt: 150 ton/hr
			500	Mg/h (Concrete)	From engineer: Concrete: 500 ton/hr
		Particle size multiplier, k	0.053		For FSP, AP-42, section 13.2.4, 11/06 ed.
		Moisture content, M	2	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Mean wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	2.40E-04	kg/Mg	$E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.)
			0.07	kg/hr (Asphalt - Westen + Eastern)	
			0.48	kg/hr (Concrete - Western +Eastern)	
			0.04	kg/hr (Asphalt - Westen only)	
			0.12	kg/hr (Concrete - Western only)	
		Mitigation efficiency	99	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		No. of operation hour	12	hr	
		Emission height	4	m	
		Emission Rate (Western + Eastern) - **Period 2 to 4**	1.00E-04	g/s (mitigated) (Asphalt)	For each plant (150 ton/hr) Period 2 to 4: 150 ton/hr x 2 plants
			3.34E-04	g/s (mitigated) (Concrete)	For each plant (500ton/hr) Period 2: 500ton/hr x 2 plants Period 3&4: 500ton/hr x 4 plants
		Emission Rate (Western only) - **Period 1**	1.00E-04	g/s (mitigated) (Asphalt)	For 150 ton/hr only
			3.34E-04	g/s (mitigated) (Concrete)	For 500 ton/hr only
Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: (EP5-EP8) WAB-EP5 to EP8, WAB-P4-EP5 to EP8, WC-EP5 to EP8, WC-P4-EP5 to EP8 EAB-EP5 to EP8, EC-EP5 to EP8, EC-2-EP5 to EP8, EC-3-EP5 to EP8, EC-P2-EP5 to EP8	Density	2.24	Mg/m3	For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		FSP emission factor (0.14)	7	mg/m3	Concretation limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		Dust exhaust flow rate for each mixer (Total 4 sources)	60	tons/hr (Asphalt)	Assume volume displacement by loading material
			1200	tons/hr (Concrete)	
			26.8	m3/hr (Asphalt)	For concrete & Asphalt density: 2.24 tons/m3
			535.7	m3/hr (Concrete)	
		No. of operation hour	12	hr	
		No. of small cement silos	4		Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission height	21 or 22	m	EP5: 21m, EP6-EP8: 22m Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate (Total 4 sources)	5.21E-05	g/s (mitigated) (Asphalt)	
			1.04E-03	g/s (mitigated) (Concrete)	
		Emission Rate (Each source)	1.30E-05	g/s (mitigated) (Asphalt)	
			2.60E-04	g/s (mitigated) (Concrete)	
	PFA weight Hopper Source ID: (EP3-EP4) WAB-EP3 to EP4, WAB-P4-EP3 to EP4, WC-EP3 to EP4, WC-P4-EP3 to EP4 EAB-EP3 to EP4, EC-EP3 to EP4, EC-2-EP3 to EP4, EC-3-EP3 to EP4, EC-P2-EP3 to EP4	Emission Factor (without mitigation)	2.60E-02	kg/Mg	Weight hopper loading (uncontrolled), AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
		Density	2.24	Mg/m3	For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		Emission factor	5.82E-03	kg/m3	
		Production rate (Total 2 sources)	25	m3/hr (Asphalt)	From engineer
			429	m3/hr (Concrete)	
		Mitigation efficiency	99	%	Total enclosure and fabric filter
		Emission height	13	m	
		Emission Rate (Total 2 sources)	4.04E-04	g/s (mitigated) (Asphalt)	
			6.94E-03	g/s (mitigated) (Concrete)	
Concrete Batching Plant (Mixing Tower)	Mixer Source ID: (EP1-EP2) WAB-EP1 to EP2, WAB-P4-EP1 to EP2, WC-EP1 to EP2, WC-P4-EP1 to EP2 EAB-EP1 to EP2, EC-EP1 to EP2, EC-2-EP1 to EP2, EC-3-EP1 to EP2, EC-P2-EP1 to EP2	Density	2.24	Mg/m3	For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		FSP emission factor (0.14)	7	mg/m3	Concretation limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		Dust exhaust flow rate for each mixer (Total 2 sources)	60	tons/hr (Asphalt)	Assume volume displacement by loading material
			1200	tons/hr (Concrete)	
			26.8	m3/hr (Asphalt)	For concrete & Asphalt density: 2.24 tons/m3
			535.7	m3/hr (Concrete)	
		No. of operation hour	12	hr	
		No. of small cement silos	2		
		Emission height	13	m	
		Emission Rate (Total 2 sources)	5.21E-05	g/s (mitigated) (Asphalt)	
			1.04E-03	g/s (mitigated) (Concrete)	

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles (FSP)

Description	Sources	Parameter	Emission Rate	Remarks
Stockpile within Asphalt batching plant in western location	Material handling and storage piles Source ID: WABA1, WABA1-P4 WABA2, WABA2-P4	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.053	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.65864E-05 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	335 m3/month (Asphalt)	From engineer
			5,250 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	1.1 m3/hr (Asphalt)	26 days per month, 12 working hours per day
			16.8 m3/hr (Aggregate)	
			2.7 Mg/hr (Asphalt)	Assume capacity of dump truck is 6m³ and 15 tons
			42.1 Mg/hr (Aggregate)	
		Area of the Asphalt stockpile, A	234 m²(Asphalt)	
		Area of the Aggregate stockpile, A	2,200 m²(Aggregate)	
		Emission Rate (Asphalt stockpile)	2.12177E-07 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			4.24354E-08 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	3.53766E-07 g/m²/s (unmitigated)	
			7.07531E-08 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-08 g/m²/s (unmitigated)	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
			1.6172E-08 g/m²/s (mitigated)	
Milled Material, Crushed Aggregate and Sub-base Stockpile in western location	Material handling and storage piles Source ID: WAR1, WAR1-P4 WCAS1, WCAS1-P4 WSS1, WSS1-P4	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.053	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.65864E-05 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	422 m3/month (Milled Material)	From engineer
			15,182 m3/month (Crushed Aggregate)	From engineer
			16,275 m3/month (Sub-base stockpile)	From engineer
		Maximum hourly output, op	1.4 m3/hr (Milled Material)	26 days per month, 12 working hours per day
			48.7 m3/hr (Crushed Aggregate)	
			52.2 m3/hr (Sub-base stockpile)	
			3.4 Mg/hr (Milled Material)	Assume capacity of dump truck is 6m³ and 15 tons
			121.6 Mg/hr (Crushed Aggregate)	
			130.4 Mg/hr (Sub-base stockpile)	
		Area of the Milled Material stockpile, A	279 m² (Milled Material)	
		Area of the Crushed Aggregate stockpile, A	5,822 m²(Crushed Aggregate)	
		Area of the Sub-base stockpile, A	6,209 m²(Sub-base stockpile)	
		Emission Rate (Milled Material stockpile)	2.24376E-07 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			4.48752E-08 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Crushed Aggregate stockpile)	3.86492E-07 g/m²/s (unmitigated)	
			7.72983E-08 g/m²/s (mitigated)	
		Emission Rate (Sub-base stockpile)	3.88446E-07 g/m²/s (unmitigated)	
			7.76891E-08 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-08 g/m²/s (unmitigated)	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
			1.6172E-08 g/m²/s (mitigated)	
Stockpile within Asphalt batching plant in eastern location	Material handling and storage piles Source ID: EABA1, EABA2	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.053	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.65864E-05 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	67 m3/month (Asphalt)	From engineer
			1,050 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	0.2 m3/hr (Asphalt)	26 days per month, 12 working hours per day
			3.4 m3/hr (Aggregate)	
			0.5 Mg/hr (Asphalt)	Assume capacity of dump truck is 6m³ and 15 tons
			8.4 Mg/hr (Aggregate)	
		Area of the Asphalt stockpile, A	154 m²(Asphalt)	
		Area of the Aggregate stockpile, A	562 m²(Aggregate)	
		Emission Rate (Asphalt stockpile)	6.46124E-08 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			1.29225E-08 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	2.77069E-07 g/m²/s (unmitigated)	
			5.54139E-08 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-08 g/m²/s (unmitigated)	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
			1.6172E-08 g/m²/s (mitigated)	
Stockpile within Airfield batching plant in eastern location	Material handling and storage piles Source ID: EACC1, EACA1	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.053	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.65864E-05 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	2,540 m3/month (Cement)	From engineer
			13,824 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	8.1 m3/hr (Cement)	26 days per month, 12 working hours per day
			44.3 m3/hr (Aggregate)	
			20.3 Mg/hr (Cement)	Assume capacity of dump truck is 6m³ and 15 tons
			110.8 Mg/hr (Aggregate)	
		Area of the Cement stockpile, A	1,163 m² (Cement)	
		Area of the Aggregate stockpile, A	5,329 m²(Aggregate)	
		Emission Rate (Cement stockpile)	3.23687E-07 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			6.47373E-08 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	3.84457E-07 g/m²/s (unmitigated)	
			7.68914E-08 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-08 g/m²/s (unmitigated)	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
			1.6172E-08 g/m²/s (mitigated)	
Stockpile within Concrete Batching Plant in eastern location	Material handling and storage piles Source ID: ECC1_2, ECC1_3, ECC1-P2 ECA1_2, ECA1_3, ECA1-P2	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.053	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.65864E-05 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	43,270 m3/month (Cement)	From engineer
			173,079 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	138.7 m3/hr (Cement)	26 days per month, 12 working hours per day
			554.7 m3/hr (Aggregate)	
			346.7 Mg/hr (Cement)	Assume capacity of dump truck is 6m³ and 15 tons
			1386.8 Mg/hr (Aggregate)	
		Area of the Cement stockpile, A	3,944 m2 (Cement)	
		Area of the Aggregate stockpile, A	14,520 m2(Aggregate)	
		Emission Rate (Cement stockpile)	1.62605E-06 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			3.25209E-07 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	1.7666E-06 g/m²/s (unmitigated)	
			3.5332E-07 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.03)	0.0255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-08 g/m²/s (unmitigated)	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
			1.6172E-08 g/m²/s (mitigated)	

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles (FSP)

Description	Sources	Parameter	Emission Rate		Remarks
Crushed Aggregate Stockpile in eastern location	Material handling and storage piles Source ID: ECA2, ECA2-P2	Percentage open stockpile area, p	20	%	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.053		k (particle size < 30µm)
		Moisture content, M	5	%	Assume worst case scenario
		Average wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.65864E-05	kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	4,364	m3/month	From engineer
		Maximum hourly output, op	14.0	m3/hr	26 days per month, 12 working hours per day
			35.0	Mg/hr	Assume capacity of dump truck is 6m^3 and 15 tons
		Area of the stockpile, A	1,866	m2	
		Emission Rate	3.46531E-07	g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			6.93062E-08	g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100	% (unmitigated)	
			20	% (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.03)	0.0255	Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-08	g/m²/s (unmitigated)	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
			1.6172E-08	g/m²/s (mitigated)	
C&D Stockpile near seawall	Material handling and storage piles Source ID: CD1	Percentage open stockpile area, p	20	%	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.053		k (particle size < 30µm)
		Moisture content, M	5	%	Assume worst case scenario
		Average wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.65864E-05	kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	1,167	m3/month	From engineer
		Maximum hourly output, op	3.7	m3/hr	26 days per month, 12 working hours per day
			7.5	Mg/hr	Density of C&D material: 2Mg/m3 (from engineer)
		Area of the stockpile, A	3,900	m2	
		Emission Rate	3.54683E-08	g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			7.09366E-09	g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100	% (unmitigated)	
			20	% (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.03)	0.0255	Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-08	g/m²/s (unmitigated)	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
			1.6172E-08	g/m²/s (mitigated)	
C&D Stockpile at midfield	Material handling and storage piles Source ID: CD2, CD3	Percentage open stockpile area, p	20	%	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.053		k (particle size < 30µm)
		Moisture content, M	5	%	Assume worst case scenario
		Average wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	6.65864E-05	kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	33,222	m3/month	From engineer
		Maximum hourly output, op	106.5	m3/hr	26 days per month, 12 working hours per day
			213.0	Mg/hr	Density of C&D material: 2Mg/m3 (from engineer)
		Area of the stockpile, A	8,100	m2	
		Emission Rate	4.86297E-07	g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			9.72595E-08	g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100	% (unmitigated)	
			20	% (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.03)	0.0255	Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-08	g/m²/s (unmitigated)	=0.85*0.03*1000000/(10000*365*24*60*60)*p/100
			1.6172E-08	g/m²/s (mitigated)	
Crushing Plant	Screening Source ID: CP1, CP2	FSP emission factor (0.03)	1.5	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Mineral Works (Stone Crushing Plants), EPD
		Density of rock	1760	Kg/m3	Assume the same as approved EIA South East New Territories (SENT) Landfill Extension (EIA-143/2007) Annex A2
		Maximum handling capcity	700	Mg/hr	From engineer
		No. of operation hour	12	hr	
		Emission height	15	m	
		Emission Rate	1.66E-04	g/s (mitigated)	
Crushing Plant	Tertiary Crushing Source ID: CP1, CP2	FSP emission factor (0.03)	1.5	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Mineral Works (Stone Crushing Plants), EPD
		Density of rock	1760	Kg/m3	Assume the same as approved EIA South East New Territories (SENT) Landfill Extension (EIA-143/2007) Annex A2
		Maximum handling capcity	700	Mg/hr	From engineer
		No. of operation hour	12	hr	
		Emission height	15	m	
		Emission Rate	1.66E-04	g/s (mitigated)	
Crushing Plant	Paved haul road outside crushing plant - For **Laden** Vehicle Source ID: WAB-HR1 to WAB-HR13 WC-HR1 to WC-HR13	Particle size multiplier, k	0.15	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	28.3	tons	Full loading of truck, assume the same as Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		FSP emission factor, E			$E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			44	g/VKT	Truck
		No. of truck trips per day	66	trips/hr	From engineer: 700Mg/hr * (1/(6m3/veh)) * (1/1760 kg/m3) * 1000 Assume density = 1760kg/m3, truck loading = 6m3/veh
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	2.00E-05	g/m/s (mitigated)	Truck for crushing plant
Crushing Plant	Paved haul road outside crushing plant - For **Unladen** Vehicle Source ID: WAB-HR1 to WAB-HR13 WC-HR1 to WC-HR13	Particle size multiplier, k	0.15	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	8.24	tons	Empty loading of truck, assume the same as Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		FSP emission factor, E			$E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			12	g/VKT	Truck
		No. of truck trips per day	66	trips/hr	From engineer: 700Mg/hr * (1/(6m3/veh)) * (1/1760 kg/m3) * 1000 Assume density = 1760kg/m3, truck loading = 6m3/veh
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	5.7E-06	g/m/s (mitigated)	Truck for crushing plant

Appendix 5.2.7 - Details of Dust Emission Sources for FSP Assessment (Tier 1)

Floating Concrete Batching Plant

Description	Sources	Parameter	Emission Rate		Remarks
Floating Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: F-EP1	Consumption Rate	39.6	Mg/h (Concrete)	From engineer: Concrete: 39.6 ton/hr = 1900 ton / (2 days * 24 h)
		Aggregate tank capacity	1900	tons	From engineer
		Refill frequency	2	days	From engineer
		Particle size multiplier, k	0.053		For FSP, AP-42, section 13.2.4, 11/06 ed.
		Moisture content, M	2	%	Assume as the same as land-based CBP
		Mean wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	2.40E-04	kg/Mg	$E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.)
			0.01	kg/hr (Concrete)	
		Mitigation efficiency	99	%	Fully covered and handling with water spraying system (From engineer)
		No. of operation hours	24	hr	Assume worst case
		Emission height	10	m	From engineer
		Emission Rate	2.64E-05	g/s (mitigated) (Concrete)	
Floating Concrete Batching Plant (Cement / PFA / CSF Silos)	Cement Silos Source ID: F-EP2	Density	2.24	Mg/m3	For Concrete density, refer to this website "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		FSP emission factor (0.14)	7	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		Cement silo capacity (Each silo)	110	tons	From engineer
		Refill frequency	2.5	days	From engineer
		Dust exhaust flow rate (Total 4 silos)	7.33	tons/hr (Concrete)	From engineer: 7.33 ton/hr = 4 silos * (110 ton / (2.5 days * 24 h))
			3.3	m3/hr (Concrete)	For concrete density: 2.24 tons/m3
		No. of operation hours	24	hr	Assume worst case
		No. of small cement silos	4		From engineer
		Emission height	10	m	From engineer
		Emission Rate (Total 4 silos)	6.37E-06	g/s (mitigated) (Concrete)	
	PFA Silos Source ID: F-EP3	Density	2.24	Mg/m3	For Concrete density, refer to this website "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		FSP emission factor (0.14)	7	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		PFA silo capacity (Each silo)	90	tons	From engineer
		Refill frequency	2	days	From engineer
		Dust exhaust flow rate (Total 2 silos)	3.75	tons/hr (Concrete)	From engineer: 3.75 ton/hr = 2 silos * (90 ton / (2 days * 24 h))
			1.7	m3/hr (Concrete)	For concrete density: 2.24 tons/m3
		No. of operation hours	24	hr	Assume worst case
		No. of PFA silos	2		From engineer
		Emission height	10	m	From engineer
		Emission Rate (Total 2 silos)	3.26E-06	g/s (mitigated) (Concrete)	
	CSF Silos Source ID: F-EP4	Density	2.24	Mg/m3	For Concrete density, refer to this website "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		FSP emission factor (0.14)	7	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		CSF silo capacity (Each silo)	30	tons	From engineer
		Refill frequency	5	days	From engineer
		Dust exhaust flow rate (Total 2 silos)	0.50	tons/hr (Concrete)	From engineer: 0.5 ton/hr = 2 silos * (30 ton / (5 days * 24 h))
			0.2	m3/hr (Concrete)	For concrete density: 2.24 tons/m3
		No. of operation hours	24	hr	Assume worst case
		No. of CSF silos	2		From engineer
		Emission height	10	m	From engineer
		Emission Rate (Total 2 silos)	4.34E-07	g/s (mitigated) (Concrete)	
Floating Concrete Batching Plant (Mixing Tower)	Mixer Source ID: F-EP5	Density	2.24	Mg/m3	For Concrete density, refer to this website "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		FSP emission factor (0.14)	7	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		Dust exhaust flow rate (Total 2 mixers)	560	tons/hr (Concrete)	From engineer: 280 ton/hr * 2 mixers
			250.0	m3/hr (Concrete)	For concrete density: 2.24 tons/m3
		No. of operation hours	24	hr	Assume worst case
		No. of mixers	2		From engineer
		Emission height	17	m	From engineer
		Emission Rate (Total 2 mixers)	4.86E-04	g/s (mitigated) (Concrete)	

Works Area	Sources	Parameter		Remarks
Submarine pipeline Submarine cable	Heavy construction Source ID: Q1: Q2: Q3: S1, S2, S3 Q4: S1, S2, S3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: Q2: Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, TRD2, TCPN-1, TCPN-2, TCPN-3, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q2: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q3: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q4: EM1, EM2, ITT1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q3: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.736E-04 g/m/s (unmitigated) 3.101E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.00 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) Boundary Crossing Facilities (BCF)	Heavy construction Source ID: Q1: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q2: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q3: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q4: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 87.5 % 26 days 12 hour 0.807 Mg/hectare/month of activity 7.185E-05 g/m²/s (unmitigated) 8.981E-06 g/m²/s (mitigated)	Assume 100% works area for heavy construction Extracted from HKBCF EIA Extracted from HKBCF EIA Extracted from HKBCF EIA AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) Hong Kong Link Road (HKLR)	Heavy construction Source ID: Q1: LR-2, LR-3, LR-4, LR-5, LR-6, LR-7, LR-8, LR-9, LR-10, LR-11, LR-12, LR-13, LR-14 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 87.5 % 26 days 12 hour 0.807 Mg/hectare/month of activity 7.185E-05 g/m²/s (unmitigated) 8.981E-06 g/m²/s (mitigated)	Assume 100% works area for heavy construction Extracted from HKLR EIA Extracted from HKLR EIA Extracted from HKLR EIA AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 Details of Dust Emission Sources for Daily RSP Assessment (Tier 1) at Year 2016

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4: 1_03-1, 1_03-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69**0.3*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Submarine pipeline Submarine cable	Heavy construction Source ID: Q1: S1, S2, S3 Q2: S1, S2, S3 Q3: S1, S2, S3 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 Details of Dust Emission Sources for Daily RSP Assessment (Tier 1) at Year 2016

(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q2: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 $=2.69*0.3*1000000/(10000*d*h*60*60)*p/100$
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 $=0.85*0.3*1000000/(10000*365*24*60*60)*p/100$
(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: AES6, EM1, EM2, ITT1 Q2: AES6, EM1, EM2, ITT1 Q3: AES6, EM1, EM2, ITT1 Q4: AES6, EM1, EM2, ITT1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 $=2.69*0.3*1000000/(10000*d*h*60*60)*p/100$
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 $=0.85*0.3*1000000/(10000*365*24*60*60)*p/100$
(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q3: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q4: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.736E-04 g/m/s (unmitigated) 3.101E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m. $=2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12$
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 $=0.85*0.3*1000000/(10000*365*24*60*60)*p/100$

T2 Expansion - Advanced Works (Temporary Car Parks at NCD, Temporary Road Diversion)	Heavy construction Source ID: Q1: TRD1, TRD3, TRD4, TRD5, TRD6 Q2: TRD1, TRD5, TRD6 Q3: TRD1, TRD5, TRD6 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) Boundary Crossing Facilities (BCF)	Heavy construction Source ID: Q1: BCF-C4 Q2: BCF-C4 Q3: BCF-C4 Q4: BCF-C4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 87.5 % 26 days 12 hour 0.807 Mg/hectare/month of activity 7.185E-05 g/m²/s (unmitigated) 8.981E-06 g/m²/s (mitigated)	Assume 100% works area for heavy construction Extracted from HKBCF EIA Extracted from HKBCF EIA Extracted from HKBCF EIA AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-1 Q2: ABT1-1 Q3: ABT1-1 Q4: ABT1-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Roadworks corresponding to Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-2, ABT1-3 Q2: ABT1-2, ABT1-3 Q3: ABT1-2, ABT1-3 Q4: ABT1-2, ABT1-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.736E-04 g/m²/s (unmitigated) 3.101E-05 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 1_01, 1_03-1, 1_03-2, 1_04, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 1_09-1, 1_09-2, 2_03B, 2_04-1, 2_04-2, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07B, 2_08, 2_09-1, 2_09-2 Q2: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 1_09-1, 1_09-2, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-1, 2_09-2, 3_01A-1, 3_01A-2, 3_01A-3 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 3_01A-1, 3_01A-3 Q4: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: Q2: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3 Q3: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2 Q4: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 12 (night) hour 0.807 Mg/hectare/month of activity 6.227E-05 g/m²/s (unmitigated) 5.168E-06 g/m²/s (mitigated)	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: Q2: Q3: Q4: 1_08B-1, 1_08B-2, 3_01A-1, 3_01A-2, 3_01A-3	Percentage active area, p Emission Factor (0.3) Emission Rate	20.0 % 0.255 Mg/hectare/year 1.617E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 4_04, 4_05-1 Q2: 4_04, 4_05-1 Q3: 4_04, 4_05-1 Q4: 4_04, 4_05-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q2: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: AES6 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.736E-04 g/m/s (unmitigated) 3.101E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.736E-04 g/m/s (unmitigated) 3.101E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.892E-05 g/m/s (unmitigated) 3.230E-06 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.892E-05 g/m/s (unmitigated) 3.230E-06 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Location	Source	Parameter	Value	Reference/Notes
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: Q2: Q3: AIS1, AIS2 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: Q2: Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1, BAT2, NAB3, NAB4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: Q2: Q3: T2E-1, T2E-2, T2E-3, BHS1, BHS2, NAB1, NAB2, SAB, NAD1 Q4: T2E-1, T2E-2, T2E-3, AIS1, AIS2, BHS1, BHS2, NAB1, NAB2, SAB, NAD1, EVA1, EVA2, EVA3, EVA4, EVA5, EVA6, EVA7, EVA8, EVA9	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Emergency Vehicular Access (EVA)	Heavy construction Source ID: Q1: Q2: Q3: EVA1, EVA2, EVA3, EVA4, EVA5, EVA6, EVA7, EVA8, EVA9 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-1 Q2: ABT1-1 Q3: ABT1-1 Q4: ABT1-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.113E-05 g/m²/s (unmitigated) 2.584E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Roadworks corresponding to Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-2, ABT1-3 Q2: ABT1-2, ABT1-3 Q3: ABT1-2, ABT1-3 Q4: ABT1-2, ABT1-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.736E-04 g/m²/s (unmitigated) 3.101E-05 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 Details of Dust Emission Sources for Daily RSP Assessment (Tier 1) at Year 2018

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_08B-2, 2_02B-1, 2_02B-2, 2_03A, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2 Q2: 1_02-1, 1_02-2, 1_05, 1_06-1, 1_06-2, 2_02B-1, 2_02B-2, 2_03A, 2_05A, 2_08, 3_02B Q3: 1_06-1, 1_06-2, 2_01, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05B-1, 2_05B-2	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69**0.3*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3 Q2: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_01A-1, 3_01A-3, 3_02A-1, 3_02A-2, 3_02A-3 Q3: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_01A-1, 3_01A-2, 3_01A-3, 3_02A-1, 3_02A-2, 3_02A-3 Q4: 1_09-1, 1_09-2, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3	Percentage active area, p	100.0 %	
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	12 (night) hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	6.22685E-05 g/m²/s (unmitigated) 5.16829E-06 g/m²/s (mitigated)	=2.69**0.3*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 1_07-2, 1_08A-2, 2_03B, 2_07B, 2_08, 3_01A-1, 3_01A-2, 3_01A-3 Q2: 1_01, 1_03-1, 1_03-2, 1_04, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B Q3: 1_09-1, 1_09-2, 2_08, 3_02B Q4: 2_04-1, 2_04-2, 2_05A, 2_06-1, 2_06-2, 2_06-3, 2_08, 3_02B	Percentage active area, p	20.0 %	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20%
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	1.6172E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_07-1, 1_08A-1, 1_08B-1, 4_04, 4_05-1 Q2: 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 4_04, 4_05-1 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_07A-1, 2_07A-2, 2_07B, 4_04, 4_05-1 Q4: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_04, 4_05-1	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q2: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q3: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q4: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 Details of Dust Emission Sources for Daily RSP Assessment (Tier 1) at Year 2018

(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: CA1, CA2 Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 0.000373611 g/m²/s (unmitigated) 3.10097E-05 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.00 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: CA3, CA4, CA5, CA6, CA7, CA8 Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate 3.23018E-06 g/m²/s (mitigated)	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.89178E-05 g/m²/s (unmitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.89178E-05 g/m²/s (unmitigated) 3.23018E-06 g/m²/s (mitigated)	Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: Q2: AIS1, AIS2, EVA6, EVA7, EVA8 Q3: AIS1, AIS2, EVA6, EVA7, EVA8 Q4: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p	100.00 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	
Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: Q2: BHS1, BHS2, EVA9 Q3: BHS1, BHS2, EVA9 Q4: BHS1, BHS2, EVA9	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p	100.00 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	
New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD1, NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4: NAD1, NAD2	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: NAD1, NAD2	Percentage active area, p	100.00 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	
BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1, BAT2, NAB3, NAB4 Q2: BAT1, BAT2, NAB3, NAB4 Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1, BAT2, NAB3, NAB4	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1, BAT2, NAB3, NAB4	Percentage active area, p	100.00 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	

Appendix 5.2.7 Details of Dust Emission Sources for Daily RSP Assessment (Tier 1) at Year 2018

T2 Expansion Area	Heavy construction Source ID: Q1: T2E-1, T2E-2, T2E-3, AIS1, AIS2, BHS2 Q2: T2E-3 Q3: Q4:	Percentage active area, p	100.0 %	Assume % works area for heavy construction
				Water suppression 12 times a day
		Mitigation efficiency	91.7 %	Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
				AP42, Section 13.2.3.3
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
				AP42, Table 11.9-4
		Emission Factor (0.3)	0.255 Mg/hectare/year	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Car Park North (North Annex Building)	Heavy construction Source ID: Q1: NAB1, NAB2, BHS1 Q2: NAB1, NAB2 Q3: Q4:	Percentage active area, p	100.0 %	Assume % works area for heavy construction
				Water suppression 12 times a day
		Mitigation efficiency	91.7 %	Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
				AP42, Section 13.2.3.3
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
				AP42, Table 11.9-4
		Emission Factor (0.3)	0.255 Mg/hectare/year	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Lounge Limo (South Annex Building)	Heavy construction Source ID: Q1: SAB Q2: SAB Q3: Q4:	Percentage active area, p	100.0 %	Assume % works area for heavy construction
				Water suppression 12 times a day
		Mitigation efficiency	91.7 %	Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
				AP42, Section 13.2.3.3
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
				AP42, Table 11.9-4
		Emission Factor (0.3)	0.255 Mg/hectare/year	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 Details of Dust Emission Sources for Daily RSP Assessment (Tier 1) at Year 2019

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 2_01, 2_02A Q2: 2_01, 2_02A, 2_05A Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_05A Q4: 2_02B-1, 2_02B-2, 2_03A	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69**0.3*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: 1_09-1, 1_09-2, 2_06-1, 2_06-2, 2_06-3, 3_02A-1, 3_02A-2, 3_02A-3 Q2: 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 3_02A-1, 3_02A-2, 3_02A-3 Q3: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 3_02A-1, 3_02A-2, 3_02A-3 Q4: 2_09-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 12 (night) hour 0.807 Mg/hectare/month of activity 6.22685E-05 g/m²/s (unmitigated) 5.16829E-06 g/m²/s (mitigated)	 AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 2_02B-1, 2_03A, 2_03B, 2_04-1, 2_04-2, 2_05A, 2_05B-1, 2_05B-2, 2_08, 2_09-1, 2_09-2, 3_02B Q2: 2_02B-1, 2_03A, 2_03B, 2_05B-1, 2_05B-2, 3_02B Q3: 1_09-2, 3_02B Q4: 3_02A-1, 3_02A-2, 3_02A-3, 3_02B	Percentage active area, p Emission Factor (0.3) Emission Rate	20.0 % 0.255 Mg/hectare/year 1.6172E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_07-1, 1_08A-1, 1_08B-1, 2_02B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 4_04 Q2: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_09-1, 2_02B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_09-1, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04 Q4: 1_09-1, 1_09-2, 2_01, 2_02A, 2_03B, 2_04-1, 2_04-2, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Location	Source	Parameter	Value	Notes
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: CA1, CA2 Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m.
		Emission Rate	0.000373611 g/m²/s (unmitigated) 3.10097E-05 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.00 %	
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: CA3, CA4, CA5, CA6, CA7, CA8 Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works)
		Emission Rate	3.89178E-05 g/m²/s (unmitigated) 3.23018E-06 g/m²/s (mitigated)	'=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.89178E-05 g/m²/s (unmitigated) 3.23018E-06 g/m²/s (mitigated)	Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: AIS1, AIS2, EVA6, EVA7, EVA8 Q2: Q3: Q4:	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p	100.00 %	
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 Details of Dust Emission Sources for Daily RSP Assessment (Tier 1) at Year 2019

Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: BHS1, BHS2, EVA9 Q2: Q3: Q4: BHS1, BHS2, EVA9	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BHS1, BHS2, EVA9	Percentage active area, p	100.00 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD1, NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4: NAD2	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: NAD1, NAD2	Percentage active area, p	100.00 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1, BAT2, NAB3, NAB4 Q2: BAT1, BAT2, NAB3, NAB4 Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1, BAT2, NAB3, NAB4	Percentage active area, p	100.00 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: Q2: Q3: Q4: AIS1, AIS2, NAB1, NAB2, NAB3, NAB4, BAT2, NAD1, EVA6, EVA7, EVA8	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor (0.3)	0.807 Mg/hectare/month of activity	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Rate	3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	=2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999
		Emission Factor (0.3)	0.255 Mg/hectare/year	
		Emission Rate	8.086E-07 g/m²/s	=0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69**0.3*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: Q2: 3_02A-1, 3_02A-2, 3_02A-3 Q3: 3_02A-1, 3_02A-2, 3_02A-3 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 12 (night) hour 0.807 Mg/hectare/month of activity 6.22685E-05 g/m²/s (unmitigated) 5.16829E-06 g/m²/s (mitigated)	AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69**0.3*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 2_09-1, 3_02A-1, 3_02A-2, 3_02A-3, 3_02B Q2: 2_09-1, 3_02B Q3: 2_09-1, 3_02B Q4: 3_02A-1, 3_02B	Percentage active area, p Emission Factor (0.3) Emission Rate	20.0 % 0.255 Mg/hectare/year 1.6172E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q2: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q3: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_09-1, 3_02A-2, 3_02A-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Western Support Area Emergency Access Road (flyover)	Heavy construction Source ID: Q1: WSA1, WSA2, WSA3, WSA4 Q2: WSA1, WSA2, WSA3, WSA4 Q3: WSA1, WSA2, WSA3, WSA4 Q4: WSA1, WSA2, WSA3, WSA4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.89178E-05 g/m²/s (unmitigated) 3.23018E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Western Support Area Emergency Access Road (at grade)	Heavy construction Source ID: Q1: WSA5 Q2: WSA5 Q3: WSA5 Q4: WSA5	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.73611E-04 g/m²/s (unmitigated) 3.10097E-05 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: AIS1, AIS2, EVA6, EVA7, EVA8 Q2: AIS1, AIS2, EVA6, EVA7, EVA8 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p Emission Factor (0.3) Emission Rate	100.00 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: BHS1, BHS2, EVA9 Q2: BHS1, BHS2, EVA9 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BHS1, BHS2, EVA9	Percentage active area, p Emission Factor (0.3) Emission Rate	100.00 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: NAD2	Percentage active area, p Emission Factor (0.3) Emission Rate	100.00 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1 Q2: BAT1, BAT2, NAB3, NAB4 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1	Percentage active area, p Emission Factor (0.3) Emission Rate	100.00 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: NAB1, NAB2, NAB3, NAB4, BAT2, NAD1 Q2: NAB1, NAB2 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4: 3_01B-1, 3_01B-2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69**0.3*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 3_02A-1, 3_02B Q2: 3_02A-1, 3_02B Q3: 3_02A-1, 3_02B Q4: 3_02A-1, 3_02B	Percentage active area, p Emission Factor (0.3) Emission Rate	20.0 % 0.255 Mg/hectare/year 1.6172E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_09-1, 3_02A-2, 3_02A-3 Q2: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_01-1, 4_01-2, 4_01-3, 4_05-1 Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 3_01B-1, 3_01B-2, 4_01-1, 4_01-2, 4_01-3, 4_05-1 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_01-1, 4_01-2, 4_01-3, 4_03-1, 4_03-2, 4_05-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Airside tunnels (AT)	Heavy construction Source ID: Q1: Q2: AT1, AT3 Q3: AT1, AT3 Q4: AT1, AT2, AT3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: Q2: Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.00 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 0.000373611 g/m²/s (unmitigated) 3.10097E-05 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.00 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: Q2: Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.89178E-05 g/m²/s (unmitigated) 3.23018E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: Q2: Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.89178E-05 g/m²/s (unmitigated) 3.23018E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*0.3*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 3_02B Q2: Q3: Q4: 3_02B	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69**0.3*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 3_02A-1 Q2: 3_02A-1 Q3: 3_02B Q4:	Percentage active area, p Emission Factor (0.3) Emission Rate	20.0 % 0.255 Mg/hectare/year 1.6172E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_01-1, 4_01-2, 4_01-3, 4_03-1, 4_03-2, 4_05-1 Q2: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-3, 3_02B, 4_03-1, 4_03-2, 4_05-1 Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_02A-1, 4_05-1 Q4: 2_01, 2_02A, 2_02B-1, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 4_05-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100
Airside tunnels (AT)	Heavy construction Source ID: Q1: AT1, AT2, AT3 Q2: AT2, AT3 Q3: AT3 Q4: AT3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor (0.3) Emission Rate	100.0 % 91.7 % 30 days 24 hour 0.807 Mg/hectare/month of activity 3.11343E-05 g/m²/s (unmitigated) 2.58414E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =2.69*0.3*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor (0.3) Emission Rate	100.0 % 0.255 Mg/hectare/year 8.086E-07 g/m²/s	AP42, Table 11.9-4 USEPA document Estimating Particulate Matter Emissions from Construction Operations, 1999 =0.85*0.3*1000000/(10000*365*24*60*60)*p/100

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles

Description	Sources	Parameter	Emission Rate	Remarks
Barging Point	Unloading of spoils to barge Source ID: TBP1-6	Particle size multiplier, k	0.35	For RSP, AP-42, section 13.2.4, 11/06 ed.
		Moisture content, M	5 %	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Mean wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	4.40E-04 kg/Mg	$E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.)
		No. of operation hour	12 hr	26 days per month
		Maximum handling capcity for each barging point	47000 Mg/day	From engineer
			1.72E+00 kg/hr (Asphalt)	Assume 12 working hours (7:00 - 19:00) per day
		Emission height	0.5 m	
		Mitigation efficiency	90 %	Installation of flexible curtain and shelter with water spray at discharge point
		Emission Rate	4.78E-02 g/s (mitigated)	
Concrete Batching Plant	Paved haul road outside concrete batching plant - For **Laden** Vehicle Source ID: WAB-HR1 to WAB-HR13 WAB-P4-HR1 to WAB-P4-HR10 WC-HR1 to WC-HR13 WC-P4-HR1 to WC-P4-HR10 EAB-HR1 to EAB-HR4 EAC-HR1 to EAC-HR4 EC-HR1 to EC-HR14 EC-P2-HR1 to EC-P2-HR7	Particle size multiplier, k	0.62 g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12 g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	28.3 tons	Full loading of Asphalt Tipper, engineering estimate
		Emission height	0.5 m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		RSP emission factor, E		$E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			180 g/VKT	Asphalt Tipper
		No. of truck trips per day	96 trips/hr	From engineer, Asphalt Tipper Lorries in Asphalt Plant
			140 trips/hr	From Enginner, Asphalt Tipper Lorries in Concrete Batching Plant
		No. of operation hour	12 hr	
		% of dust suppression	97.5 %	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	1.20E-04 g/m/s (mitigated)	Asphalt Tipper Lorries in Asphalt Plant
			1.75E-04 g/m/s (mitigated)	Asphalt Tipper Lorries in Concrete Batching Plant
Concrete Batching Plant	Paved haul road outside concrete batching plant - For **Unladen** Vehicle Source ID: WAB-HR1 to WAB-HR13 WAB-P4-HR1 to WAB-P4-HR10 WC-HR1 to WC-HR13 WC-P4-HR1 to WC-P4-HR10 EAB-HR1 to EAB-HR4 EAC-HR1 to EAC-HR4 EC-HR1 to EC-HR14 EC-P2-HR1 to EC-P2-HR7	Particle size multiplier, k	0.62 g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12 g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	8.24 tons	Empty loading of Asphalt Tipper, engineering estimate
		Emission height	0.5 m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		RSP emission factor, E		$E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			51 g/VKT	Asphalt Tipper
		No. of truck trips per day	30 trips/hr	From engineer, Asphalt Tipper Lorries in Asphalt Plant
			140 trips/hr	From Enginner, Asphalt Tipper Lorries in Concrete Batching Plant
		No. of operation hour	12 hr	
		% of dust suppression	97.5 %	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	1.1E-05 g/m/s (mitigated)	Asphalt Tipper Lorries in Asphalt Plant
			4.97E-05 g/m/s (mitigated)	Asphalt Tipper Lorries in Concrete Batching Plant
Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: (EP9) WAB-EP9, WAB-P4-EP9, WC-EP9, WC-P4-EP9 EAB-EP9, EC-EP9, EC-2-EP9, EC-3-EP9, EC-P2-EP9	Consumption Rate (Western + Eastern)	300 Mg/h (Asphalt)	From engineer: Asphalt: 300 ton/hr = 150 ton/hr x 2 plants
			2000 Mg/h (Concrete)	From engineer: Concrete: 2000 ton/hr = 500 ton/hr x4 plants
		Consumption Rate (Western only)	150 Mg/h (Asphalt)	From engineer: Asphalt: 150 ton/hr
			500 Mg/h (Concrete)	From engineer: Concrete: 500 ton/hr
		Particle size multiplier, k	0.35	For RSP, AP-42, section 13.2.4, 11/06 ed.
		Moisture content, M	2 %	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Mean wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	1.59E-03 kg/Mg	$E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.)
			0.48 kg/hr (Asphalt - Westen + Eastern)	
			3.17 kg/hr (Concrete - Western +Eastern)	
			0.24 kg/hr (Asphalt - Westen only)	
			0.79 kg/hr (Concrete - Western only)	
		Mitigation efficiency	99 %	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		No. of operation hour	12 hr	
		Emission height	4 m	
		Emission Rate (Western + Eastern) - **Period 2 to 4**	6.61E-04 g/s (mitigated) (Asphalt)	For each plant (150 ton/hr) Period 2 to 4: 150 ton/hr x 2 plants
			2.20E-03 g/s (mitigated) (Concrete)	For each plant (500ton/hr) Period 2: 500ton/hr x 2 plants Period 3&4: 500ton/hr x 4 plants
		Emission Rate (Western only) - **Period 1**	6.61E-04 g/s (mitigated) (Asphalt)	For 150 ton/hr only
			2.20E-03 g/s (mitigated) (Concrete)	For 500 ton/hr only
Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: (EP5-EP8) WAB-EP5 to EP8, WAB-P4-EP5 to EP8, WC-EP5 to EP8, WC-P4-EP5 to EP8 EAB-EP5 to EP8, EC-EP5 to EP8, EC-2-EP5 to EP8, EC-3-EP5 to EP8, EC-P2-EP5 to EP8	Density	2.24 Mg/m3	For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		RSP emission factor (0.37)	18.5 mg/m3	Conctertation limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		Dust exhaust flow rate for each mixer (Total 4 sources)	60 tons/hr (Asphalt)	Assume volume displacement by loading material
			1200 tons/hr (Concrete)	
			26.8 m3/hr (Asphalt)	For concrete & Asphalt density: 2.24 tons/m3
			535.7 m3/hr (Concrete)	
		No. of operation hour	12 hr	
		No. of small cement silos	4	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission height	21 or 22 m	EP5: 21m, EP6-EP8: 22m Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate (Total 4 sources)	1.38E-04 g/s (mitigated) (Asphalt)	
			2.75E-03 g/s (mitigated) (Concrete)	
		Emission Rate (Each source)	3.44E-05 g/s (mitigated) (Asphalt)	
			6.88E-04 g/s (mitigated) (Concrete)	
	PFA weight Hopper Source ID: (EP3-EP4) WAB-EP3 to EP4, WAB-P4-EP3 to EP4, WC-EP3 to EP4, WC-P4-EP3 to EP4 EAB-EP3 to EP4, EC-EP3 to EP4, EC-2-EP3 to EP4, EC-3-EP3 to EP4, EC-P2-EP3 to EP4	Emission Factor (without mitigation)	2.60E-03 kg/Mg	Weight hopper loading (uncontrolled), AP-42, section 11.12-4, Table 11.12-1, 6/06 ed.
		Density	2.24 Mg/m3	For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		RSP emission factor	5.82E-03 kg/m3	
		Production rate (Total 2 sources)	25 m3/hr (Asphalt)	From engineer
			429 m3/hr (Concrete)	
		Mitigation efficiency	99 %	Total enclosure and fabric filter
		Emission height	13 m	
		Emission Rate (Total 2 sources)	4.04E-04 g/s (mitigated) (Asphalt)	
			6.94E-03 g/s (mitigated) (Concrete)	
Concrete Batching Plant (Mixing Tower)	Mixer Source ID: (EP1-EP2) WAB-EP1 to EP2, WAB-P4-EP1 to EP2, WC-EP1 to EP2, WC-P4-EP1 to EP2 EAB-EP1 to EP2, EC-EP1 to EP2, EC-2-EP1 to EP2, EC-3-EP1 to EP2, EC-P2-EP1 to EP2	Density	2.24 Mg/m3	For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt"
		RSP emission factor (0.37)	18.5 mg/m3	Conctertation limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		Dust exhaust flow rate for each mixer (Total 2 sources)	60 tons/hr (Asphalt)	Assume volume displacement by loading material
			1200 tons/hr (Concrete)	
			26.8 m3/hr (Asphalt)	For concrete & Asphalt density: 2.24 tons/m3
			535.7 m3/hr (Concrete)	
		No. of operation hour	12 hr	
		No. of small cement silos	2	
		Emission height	13 m	
		Emission Rate (Total 2 sources)	1.38E-04 g/s (mitigated) (Asphalt)	
			2.75E-03 g/s (mitigated) (Concrete)	

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles

Description	Sources	Parameter	Emission Rate	Remarks
Stockpile within Asphalt batching plant in western location	Material handling and storage piles Source ID: WABA1, WABA1-P4 WABA2, WABA2-P4	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.35	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000439721 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	335 m3/month (Asphalt)	From engineer
			5,250 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	1.1 m3/hr (Asphalt)	26 days per month, 12 working hours per day
			16.8 m3/hr (Aggregate)	
			2.7 Mg/hr (Asphalt)	Assume capacity of dump truck is 6m3 and 15 tons
			42.1 Mg/hr (Aggregate)	
		Area of the Asphalt stockpile, A	234 m²(Asphalt)	
		Area of the Aggregate stockpile, A	2,200 m²(Aggregate)	
		Emission Rate (Asphalt stockpile)	1.40117E-06 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			2.80234E-07 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	2.33619E-06 g/m²/s (unmitigated)	
			4.67237E-07 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-07 g/m²/s (unmitigated)	=0.3*0.85*1000000/(10000*365*24*60*60)*p/100
			1.6172E-07 g/m²/s (mitigated)	
Milled Material, Crushed Aggregate and Sub-base Stockpile in western location	Material handling and storage piles Source ID: WAR1, WAR1-P4 WCAS1, WCAS1-P4 WSS1, WSS1-P4	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.35	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000439721 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	422 m3/month (Milled Material)	From engineer
			15,182 m3/month (Crushed Aggregate)	From engineer
			16,275 m3/month (Sub-base stockpile)	From engineer
		Maximum hourly output, op	1.4 m3/hr (Milled Material)	26 days per month, 12 working hours per day
			48.7 m3/hr (Crushed Aggregate)	
			52.2 m3/hr (Sub-base stockpile)	
			3.4 Mg/hr (Milled Material)	
			121.6 Mg/hr (Crushed Aggregate)	Assume capacity of dump truck is 6m3 and 15 tons
			130.4 Mg/hr (Sub-base stockpile)	
		Area of the Milled Material stockpile, A	279 m² (Milled Material)	
		Area of the Crushed Aggregate stockpile, A	5,822 m²(Crushed Aggregate)	
		Area of the Sub-base stockpile, A	6,209 m²(Sub-base stockpile)	
		Emission Rate (Milled Material stockpile)	1.48173E-06 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			2.96346E-07 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Crushed Aggregate stockpile)	2.5523E-06 g/m²/s (unmitigated)	
			5.10461E-07 g/m²/s (mitigated)	
		Emission Rate (Sub-base stockpile)	2.56521E-06 g/m²/s (unmitigated)	
			5.13041E-07 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-07 g/m²/s (unmitigated)	=0.3*0.85*1000000/(10000*365*24*60*60)*p/100
			1.6172E-07 g/m²/s (mitigated)	
Stockpile within Asphalt batching plant in eastern location	Material handling and storage piles Source ID: EABA1, EABA2	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.35	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000439721 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	67 m3/month (Asphalt)	From engineer
			1,050 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	0.2 m3/hr (Asphalt)	26 days per month, 12 working hours per day
			3.4 m3/hr (Aggregate)	
			0.5 Mg/hr (Asphalt)	Assume capacity of dump truck is 6m3 and 15 tons
			8.4 Mg/hr (Aggregate)	
		Area of the Asphalt stockpile, A	154 m²(Asphalt)	
		Area of the Aggregate stockpile, A	562 m²(Aggregate)	
		Emission Rate (Asphalt stockpile)	4.26685E-07 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			8.53371E-08 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	1.8297E-06 g/m²/s (unmitigated)	
			3.65941E-07 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-07 g/m²/s (unmitigated)	=0.3*0.85*1000000/(10000*365*24*60*60)*p/100
			1.6172E-07 g/m²/s (mitigated)	
Stockpile within Airfield batching plant in eastern location	Material handling and storage piles Source ID: EACC1, EACA1	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.35	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000439721 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	2,540 m3/month (Cement)	From engineer
			13,824 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	8.1 m3/hr (Cement)	26 days per month, 12 working hours per day
			44.3 m3/hr (Aggregate)	
			20.3 Mg/hr (Cement)	Assume capacity of dump truck is 6m3 and 15 tons
			110.8 Mg/hr (Aggregate)	
		Area of the Cement stockpile, A	1,163 m² (Cement)	
		Area of the Aggregate stockpile, A	5,329 m²(Aggregate)	
		Emission Rate (Cement stockpile)	2.13755E-06 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			4.27511E-07 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	2.53887E-06 g/m²/s (unmitigated)	
			5.07773E-07 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-07 g/m²/s (unmitigated)	=0.3*0.85*1000000/(10000*365*24*60*60)*p/100
			1.6172E-07 g/m²/s (mitigated)	
Stockpile within Concrete Batching Plant in eastern location	Material handling and storage piles Source ID: ECC1_2, ECC1_3, ECC1-P2 ECA1_2, ECA1_3, ECA1-P2	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.35	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000439721 kg/Mg	E=k*0.0016*[(U/2.2)^1.3/(M/2)^1.4]
		Monthly output	43,270 m3/month (Cement)	From engineer
			173,079 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	138.7 m3/hr (Cement)	26 days per month, 12 working hours per day
			554.7 m3/hr (Aggregate)	
			346.7 Mg/hr (Cement)	Assume capacity of dump truck is 6m3 and 15 tons
			1386.8 Mg/hr (Aggregate)	
		Area of the Cement stockpile, A	3,944 m2 (Cement)	
		Area of the Aggregate stockpile, A	14,520 m2(Aggregate)	
		Emission Rate (Cement stockpile)	1.0738E-05 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			2.14761E-06 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	1.16662E-05 g/m²/s (unmitigated)	
			2.33324E-06 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.3)	0.255 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-07 g/m²/s (unmitigated)	=0.3*0.85*1000000/(10000*365*24*60*60)*p/100
			1.6172E-07 g/m²/s (mitigated)	

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles

Description	Sources	Parameter	Emission Rate		Remarks
Crushed Aggregate Stockpile in eastern location	Material handling and storage piles Source ID: ECA2, ECA2-P2	Percentage open stockpile area, p	20	%	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.35		k (particle size < 30μm)
		Moisture content, M	5	%	Assume worst case scenario
		Average wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000439721	kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	4,364	m3/month	From engineer
		Maximum hourly output, op	14.0	m3/hr	26 days per month, 12 working hours per day
			35.0	Mg/hr	Assume capacity of dump truck is 6m^3 and 15 tons
		Area of the stockpile, A	1,866	m2	
		Emission Rate	2.28841E-06	g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			4.57683E-07	g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100	% (unmitigated)	
			20	% (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.3)	0.255	Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-07	g/m²/s (unmitigated)	=0.3*0.85*1000000/(10000*365*24*60*60)*p/100
			1.6172E-07	g/m²/s (mitigated)	
C&D Stockpile near seawall	Material handling and storage piles Source ID: CD1	Percentage open stockpile area, p	20	%	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.35		k (particle size < 30μm)
		Moisture content, M	5	%	Assume worst case scenario
		Average wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000439721	kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	1,167	m3/month	From engineer
		Maximum hourly output, op	3.7	m3/hr	26 days per month, 12 working hours per day
			7.5	Mg/hr	Density of C&D material: 2Mg/m3 (from engineer)
		Area of the stockpile, A	3,900	m2	
		Emission Rate	2.34225E-07	g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			4.68449E-08	g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100	% (unmitigated)	
			20	% (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.3)	0.255	Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-07	g/m²/s (unmitigated)	=0.3*0.85*1000000/(10000*365*24*60*60)*p/100
			1.6172E-07	g/m²/s (mitigated)	
C&D Stockpile at midfield	Material handling and storage piles Source ID: CD2, CD3	Percentage open stockpile area, p	20	%	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.35		k (particle size < 30μm)
		Moisture content, M	5	%	Assume worst case scenario
		Average wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000439721	kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	33,222	m3/month	From engineer
		Maximum hourly output, op	106.5	m3/hr	26 days per month, 12 working hours per day
			213.0	Mg/hr	Density of C&D material: 2Mg/m3 (from engineer)
		Area of the stockpile, A	8,100	m2	
		Emission Rate	3.2114E-06	g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			6.42279E-07	g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100	% (unmitigated)	
			20	% (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor (0.3)	0.255	Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	8.086E-07	g/m²/s (unmitigated)	=0.3*0.85*1000000/(10000*365*24*60*60)*p/100
			1.6172E-07	g/m²/s (mitigated)	
Crushing Plant	Screening Source ID: CP1, CP2	RSP emission factor (0.3)	15	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Mineral Works (Stone Crushing Plants), EPD
		Density of rock	1760	Kg/m3	Assume the same as approved EIA South East New Territories (SENT) Landfill Extension (EIA-143/2007) Annex A2
		Maximum handling capcity	700	Mg/hr	From engineer
		No. of operation hour	12	hr	
		Emission height	15	m	
		Emission Rate	1.66E-03	g/s (mitigated)	
Crushing Plant	Tertiary Crushing Source ID: CP1, CP2	RSP emission factor (0.3)	15	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Mineral Works (Stone Crushing Plants), EPD
		Density of rock	1760	Kg/m3	Assume the same as approved EIA South East New Territories (SENT) Landfill Extension (EIA-143/2007) Annex A2
		Maximum handling capcity	700	Mg/hr	From engineer
		No. of operation hour	12	hr	
		Emission height	15	m	
		Emission Rate	1.66E-03	g/s (mitigated)	
Crushing Plant	Paved haul road outside crushing plant - For **Laden** Vehicle Source ID: WAB-HR1 to WAB-HR13 WC-HR1 to WC-HR13	Particle size multiplier, k	0.62	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	28.3	tons	Full loading of truck, assume the same as Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		RSP emission factor, E	180	g/VKT	$E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Truck
		No. of truck trips per day	66	trips/hr	From engineer: 700Mg/hr * (1/(6m3/veh)) * (1/1760 kg/m3) * 1000 Assume density = 1760kg/m3, truck loading = 6m3/veh
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	8.29E-05	g/m/s (mitigated)	Truck for crushing plant
Crushing Plant	Paved haul road outside crushing plant - For **Unladen** Vehicle Source ID: WAB-HR1 to WAB-HR13 WC-HR1 to WC-HR13	Particle size multiplier, k	0.62	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	8.24	tons	Empty loading of truck, assume the same as Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		RSP emission factor, E	51	g/VKT	$E=k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.) Truck
		No. of truck trips per day	66	trips/hr	From engineer: 700Mg/hr * (1/(6m3/veh)) * (1/1760 kg/m3) * 1000 Assume density = 1760kg/m3, truck loading = 6m3/veh
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	2.4E-05	g/m/s (mitigated)	Truck for crushing plant

Floating Concrete Batching Plant

Description	Sources	Parameter	Emission Rate		Remarks
Floating Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: F-EP1	Consumption Rate Aggregate tank capacity Refill frequency Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E	39.6 1900 2 0.35 2 4.9 1.59E-03	Mg/h (Concrete) tons days % m/s kg/Mg	From engineer: Concrete: 39.6 ton/hr = 1900 ton / (2 days * 24 h) From engineer From engineer For RSP, AP-42, section 13.2.4, 11/06 ed. Assume as the same as land-based CBP HKOAMO 2012 annual average wind speed E=k x (0.0016) x ((U/2.2)^1.3/(M/2)^1.4) (AP-42, section 13.2.4, 11/06 ed.)
			0.06	kg/hr (Concrete)	
		Mitigation efficiency	99	%	Fully covered and handling with water spraying system (From engineer)
		No. of operation hours Emission height	24 10	hr m	Assume worst case From engineer
		Emission Rate	1.74E-04	g/s (mitigated) (Concrete)	
Floating Concrete Batching Plant (Cement / PFA / CSF Silos)	Cement Silos Source ID: F-EP2	Density RSP emission factor (0.37)	2.24 18.5	Mg/m3 mg/m3	For Concrete density, refer to this website "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt" Concretation limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		Cement silo capacity (Each silo) Refill frequency Dust exhaust flow rate (Total 4 silos)	110 2.5 7.33 3.3	tons days tons/hr (Concrete) m3/hr (Concrete)	From engineer From engineer From engineer: 7.33 ton/hr = 4 silos * (110 ton / (2.5 days * 24 h)) For concrete density: 2.24 tons/m3
		No. of operation hours No. of small cement silos Emission height Emission Rate (Total 4 silos)	24 4 10 1.68E-05	hr m g/s (mitigated) (Concrete)	Assume worst case From engineer From engineer
	PFA Silos Source ID: F-EP3	Density RSP emission factor (0.37)	2.24 18.5	Mg/m3 mg/m3	For Concrete density, refer to this website "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt" Concretation limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		PFA silo capacity (Each silo) Refill frequency Dust exhaust flow rate (Total 2 silos)	90 2 3.75 1.7	tons days tons/hr (Concrete) m3/hr (Concrete)	From engineer From engineer From engineer: 3.75 ton/hr = 2 silos * (90 ton / (2 days * 24 h)) For concrete density: 2.24 tons/m3
		No. of operation hours No. of PFA silos Emission height Emission Rate (Total 2 silos)	24 2 10 8.60E-06	hr m g/s (mitigated) (Concrete)	Assume worst case From engineer From engineer
	CSF Silos Source ID: F-EP4	Density RSP emission factor (0.37)	2.24 18.5	Mg/m3 mg/m3	For Concrete density, refer to this website "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt" Concretation limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		CSF silo capacity (Each silo) Refill frequency Dust exhaust flow rate (Total 2 silos)	30 5 0.50 0.2	tons days tons/hr (Concrete) m3/hr (Concrete)	From engineer From engineer From engineer: 0.5 ton/hr = 2 silos * (30 ton / (5 days * 24 h)) For concrete density: 2.24 tons/m3
		No. of operation hours No. of CSF silos Emission height Emission Rate (Total 2 silos)	24 2 10 1.15E-06	hr m g/s (mitigated) (Concrete)	Assume worst case From engineer From engineer
Floating Concrete Batching Plant (Mixing Tower)	Mixer Source ID: F-EP5	Density RSP emission factor (0.37)	2.24 18.5	Mg/m3 mg/m3	For Concrete density, refer to this website "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt" Concretation limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD
		Dust exhaust flow rate (Total 2 mixers)	560	tons/hr (Concrete)	From engineer: 280 ton/hr * 2 mixers
			250.0	m3/hr (Concrete)	For concrete density: 2.24 tons/m3
		No. of operation hours No. of mixers Emission height Emission Rate (Total 2 mixers)	24 2 17 1.28E-03	hr m g/s (mitigated) (Concrete)	Assume worst case From engineer From engineer

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2015

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Submarine pipeline Submarine cable	Heavy construction Source ID: Q1: Q2: Q3: S1, S2, S3 Q4: S1, S2, S3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/m²/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: Q2: Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, TRD2, TCPN-1, TCPN-2, TCPN-3, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q2: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q3: SCCP1, AES6, AES13, AES14, AES15, EM1, EM2, EGC3-1, EGC3-2, ITT1 Q4: EM1, EM2, ITT1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q3: SCRE1, SCRE2, SCRE3, SCRE4, SCRE5, SCRE6, SCRE7, SCRE8, SCRE9, SCRE10, AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.245E-03 g/m/s (unmitigated) 1.034E-04 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) Boundary Crossing Facilities (BCF)	Heavy construction Source ID: Q1: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q2: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q3: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4 Q4: BCF-A, BCF-B, BCF-C1, BCF-C2, BCF-C3, BCF-C4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 87.5 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.395E-04 g/m²/s (unmitigated) 2.994E-05 g/m²/s (mitigated)	Assume 100% works area for heavy construction Extracted from HKBCF EIA Extracted from HKBCF EIA Extracted from HKBCF EIA AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) Hong Kong Link Road (HKLR)	Heavy construction Source ID: Q1: LR-2, LR-3, LR-4, LR-5, LR-6, LR-7, LR-8, LR-9, LR-10, LR-11, LR-12, LR-13, LR-14 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 87.5 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.395E-04 g/m²/s (unmitigated) 2.994E-05 g/m²/s (mitigated)	Assume 100% works area for heavy construction Extracted from HKLR EIA Extracted from HKLR EIA Extracted from HKLR EIA AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2016

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4: 1_03-1, 1_03-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Submarine pipeline Submarine cable	Heavy construction Source ID: Q1: S1, S2, S3 Q2: S1, S2, S3 Q3: S1, S2, S3 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q2: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: AES6, EM1, EM2, ITT1 Q2: AES6, EM1, EM2, ITT1 Q3: AES6, EM1, EM2, ITT1 Q4: AES6, EM1, EM2, ITT1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q3: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q4: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.245E-03 g/m/s (unmitigated) 1.034E-04 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Advanced Works (Temporary Car Parks at NCD, Temporary Road Diversion)	Heavy construction Source ID: Q1: TRD1, TRD3, TRD4, TRD5, TRD6 Q2: TRD1, TRD5, TRD6 Q3: TRD1, TRD5, TRD6 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2016

(Concurrent project) Boundary Crossing Facilities (BCF)	Heavy construction Source ID: Q1: BCF-C4 Q2: BCF-C4 Q3: BCF-C4 Q4: BCF-C4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 87.5 % 26 days 12 hour 2.69 Mg/hectare/month of activity 2.395E-04 g/m²/s (unmitigated) 2.994E-05 g/m²/s (mitigated)	Assume 100% works area for heavy construction Extracted from HKBCF EIA Extracted from HKBCF EIA Extracted from HKBCF EIA AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-1 Q2: ABT1-1 Q3: ABT1-1 Q4: ABT1-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks corresponding to Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-2, ABT1-3 Q2: ABT1-2, ABT1-3 Q3: ABT1-2, ABT1-3 Q4: ABT1-2, ABT1-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.245E-03 g/m²/s (unmitigated) 1.034E-04 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2017

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 1_01, 1_03-1, 1_03-2, 1_04, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 1_09-1, 1_09-2, 2_03B, 2_04-1, 2_04-2, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07B, 2_08, 2_09-1, 2_09-2 Q2: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 1_09-1, 1_09-2, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-1, 2_09-2, 3_01A-1, 3_01A-2, 3_01A-3 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 3_01A-1, 3_01A-2, 3_01A3 Q4: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: Q2: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3 Q3: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2 Q4: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 12 (night) hour 2.69 Mg/hectare/month of activity 2.076E-04 g/m²/s (unmitigated) 1.723E-05 g/m²/s (mitigated)	 AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: Q2: Q3: Q4: 1_08B-1, 1_08B-2, 3_01A-1, 3_01A-2, 3_01A-3	Percentage active area, p Emission Factor Emission Rate	20.0 % 0.85 Mg/hectare/year 5.391E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 4_04, 4_05-1 Q2: 4_04, 4_05-1 Q3: 4_04, 4_05-1 Q4: 4_04, 4_05-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2017

(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q2: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q3: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7 Q4: NCD1-1, NCD1-2, NCD1-3, NCD1-4, NCD1-5, NCD2-1, NCD2-2, NCD2-3, TRD2, TRD3, TRD4, TCPN-1, TCPN-2, TCPN-3, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2, EGC4, EGC5, EGC6, EGC7	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) ITT works (area sources)	Heavy construction Source ID: Q1: AES6 Q2: Q3: Q4:	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2017

(Concurrent project) ITT works (line sources) Roadworks - at grade	Heavy construction Source ID: Q1: AES1, AES2, AES3, AES4, AES5, AES7, AES8, AES9, AES10, AES11, AES12 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.245E-03 g/m/s (unmitigated) 1.034E-04 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*0.3*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.245E-03 g/m/s (unmitigated) 1.034E-04 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.297E-04 g/m/s (unmitigated) 1.077E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.297E-04 g/m/s (unmitigated) 1.077E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: Q2: Q3: AIS1, AIS2 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: Q2: Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1, BAT2, NAB3, NAB4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2017				
T2 Expansion Area	Heavy construction Source ID: Q1: Q2: Q3: T2E-1, T2E-2, T2E-3, BHS1, BHS2, NAB1, NAB2, SAB, NAD1 Q4: T2E-1, T2E-2, T2E-3, AIS1, AIS2, BHS1, BHS2, NAB1, NAB2, SAB, NAD1, EVA1, EVA2, EVA3, EVA4, EVA5, EVA6, EVA7, EVA8, EVA9	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Emergency Vehicular Access (EVA)	Heavy construction Source ID: Q1: Q2: Q3: EVA1, EVA2, EVA3, EVA4, EVA5, EVA6, EVA7, EVA8, EVA9 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-1 Q2: ABT1-1 Q3: ABT1-1 Q4: ABT1-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks corresponding to Other airport facilities related works	Heavy construction Source ID: Q1: ABT1-2, ABT1-3 Q2: ABT1-2, ABT1-3 Q3: ABT1-2, ABT1-3 Q4: ABT1-2, ABT1-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.245E-03 g/m²/s (unmitigated) 1.034E-04 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2018

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_08B-2, 2_02B-1, 2_02B-2, 2_03A, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2 Q2: 1_02-1, 1_02-2, 1_05, 1_06-1, 1_06-2, 2_02B-1, 2_02B-2, 2_03A, 2_05A, 2_08, 3_02B Q3: 1_06-1, 1_06-2, 2_01, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05B-1, 2_05B-2	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3 Q2: 1_09-1, 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_01A-1, 3_01A-2, 3_01A-3, 3_02A-1, 3_02A-2, 3_02A-3 Q3: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 2_09-2, 3_01A-1, 3_01A-2, 3_01A-3, 3_02A-1, 3_02A-2, 3_02A-3 Q4: 1_09-1, 1_09-2, 2_09-1, 2_09-2, 3_02A-1, 3_02A-2, 3_02A-3	Percentage active area, p	100.0 %	
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	12 (night) hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	2.076E-04 g/m²/s (unmitigated) 1.723E-05 g/m²/s (mitigated)	=2.69*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 1_07-2, 1_08A-2, 2_03B, 2_07B, 2_08, 3_01A-1, 3_01A-2, 3_01A-3 Q2: 1_01, 1_03-1, 1_03-2, 1_04, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B Q3: 1_09-1, 1_09-2, 2_08, 3_02B Q4: 2_04-1, 2_04-2, 2_05A, 2_06-1, 2_06-2, 2_06-3, 2_08, 3_02B	Percentage active area, p	20.0 %	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20%
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	5.391E-07 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_07-1, 1_08A-1, 1_08B-1, 4_04, 4_05-1 Q2: 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 4_04, 4_05-1 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_07A-1, 2_07A-2, 2_07B, 4_04, 4_05-1 Q4: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_07-1, 1_07-2, 1_08A-1, 1_08A-2, 1_08B-1, 1_08B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_04, 4_05-1	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
(Concurrent project) NCD works	Heavy construction Source ID: Q1: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q2: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q3: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2 Q4: NCD2-1, NCD2-2, NCD2-3, TRD3, TRD4, SCCP1, EGC1, EGC2, EGC3-1, EGC3-2	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100

Location	Source	Parameter	Value	Notes
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: CA1, CA2 Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p	100.00 %	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*1000000/(10000*d*h*60*60)*p/100 * 12
		Emission Rate	1.245E-03 g/m/s (unmitigated)	
			1.034E-04 g/m/s (mitigated)	
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.00 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: CA3, CA4, CA5, CA6, CA7, CA8 Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p	100.0 %	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
		Emission Rate	1.297E-04 g/m/s (unmitigated)	
			1.077E-05 g/m/s (mitigated)	
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p	100.0 %	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
		Emission Rate	1.297E-04 g/m/s (unmitigated)	
			1.077E-05 g/m/s (mitigated)	
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: Q2: AIS1, AIS2, EVA6, EVA7, EVA8 Q3: AIS1, AIS2, EVA6, EVA7, EVA8 Q4: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p	100.00 %	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
		Emission Rate	1.038E-04 g/m²/s (unmitigated)	
			8.614E-06 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p	100.00 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: Q2: BHS1, BHS2, EVA9 Q3: BHS1, BHS2, EVA9 Q4: BHS1, BHS2, EVA9	Percentage active area, p	100.00 %	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
		Emission Rate	1.038E-04 g/m²/s (unmitigated)	
			8.614E-06 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above) Q1:	Percentage active area, p	100.00 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD1, NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4: NAD1, NAD2	Percentage active area, p	100.00 %	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		Mitigation efficiency	91.7 %	
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
		Emission Rate	1.038E-04 g/m²/s (unmitigated)	
			8.614E-06 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above) Q1: NAD1, NAD2	Percentage active area, p	100.00 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2018

BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1, BAT2, NAB3, NAB4 Q2: BAT1, BAT2, NAB3, NAB4 Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1, BAT2, NAB3, NAB4	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1, BAT2, NAB3, NAB4	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: T2E-1, T2E-2, T2E-3, AIS1, AIS2, BHS2 Q2: T2E-3 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Car Park North (North Annex Building)	Heavy construction Source ID: Q1: NAB1, NAB2, BHS1 Q2: NAB1, NAB2 Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
T2 Expansion - Lounge Limo (South Annex Building)	Heavy construction Source ID: Q1: SAB Q2: SAB Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2019

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 2_01, 2_02A Q2: 2_01, 2_02A, 2_05A Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_05A Q4: 2_02B-1, 2_02B-2, 2_03A	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: 1_09-1, 1_09-2, 2_06-1, 2_06-2, 2_06-3, 3_02A-1, 3_02A-2, 3_02A-3 Q2: 1_09-2, 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 3_02A-1, 3_02A-2, 3_02A-3 Q3: 2_04-1, 2_04-2, 2_06-1, 2_06-2, 2_06-3, 2_09-1, 3_02A-1, 3_02A-2, 3_02A-3 Q4: 2_09-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 12 (night) hour 2.69 Mg/hectare/month of activity 2.076E-04 g/m²/s (unmitigated) 1.723E-05 g/m²/s (mitigated)	 AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 2_02B-1, 2_03A, 2_03B, 2_04-1, 2_04-2, 2_05A, 2_05B-1, 2_05B-2, 2_08, 2_09-1, 2_09-2, 3_02B Q2: 2_02B-1, 2_03A, 2_03B, 2_05B-1, 2_05B-2, 3_02B Q3: 1_09-2, 3_02B Q4: 3_02A-1, 3_02A-2, 3_02A-3, 3_02B	Percentage active area, p Emission Factor Emission Rate	20.0 % 0.85 Mg/hectare/year 5.391E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_07-1, 1_08A-1, 1_08B-1, 2_02B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 4_04 Q2: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_09-1, 2_02B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_09-1, 2_03B, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04 Q4: 1_09-1, 1_09-2, 2_01, 2_02A, 2_03B, 2_04-1, 2_04-2, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land (PART 1)	Heavy construction Source ID: Q1: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_07-1, 1_08A-1, 1_08B-1, 2_02B-2 Q2: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_09-1, 2_02B-2 Q3: 1_01, 1_02-1, 1_02-2, 1_03-1, 1_03-2, 1_04, 1_05, 1_06-1, 1_06-2, 1_09-1, 2_03B Q4: 1_09-1, 1_09-2, 2_01, 2_02A, 2_03B, 2_04-1, 2_04-2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land (PART 2)	Heavy construction Source ID: Q1: 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 4_04 Q2: 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04 Q3: 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04 Q4: 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2, 4_04	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: CA1, CA2 Q2: CA1, CA2 Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.245E-03 g/m/s (unmitigated) 1.034E-04 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2019

South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: CA3, CA4, CA5, CA6, CA7, CA8 Q2: CA3, CA4, CA5, CA6, CA7, CA8 Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate 	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.297E-04 g/m/s (unmitigated) 1.077E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q2: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate 	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.297E-04 g/m/s (unmitigated) 1.077E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: AIS1, AIS2, EVA6, EVA7, EVA8 Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: BHS1, BHS2, EVA9 Q2: Q3: Q4: BHS1, BHS2, EVA9	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BHS1, BHS2, EVA9	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD1, NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4: NAD2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: NAD1, NAD2	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1, BAT2, NAB3, NAB4 Q2: BAT1, BAT2, NAB3, NAB4 Q3: BAT1, BAT2, NAB3, NAB4 Q4: BAT1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1, BAT2, NAB3, NAB4	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: Q2: Q3: Q4: AIS1, AIS2, NAB1, NAB2, NAB3, NAB4, BAT2, NAD1, EVA6, EVA7, EVA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2020

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	For night-time activities: Q1: Q2: 3_02A-1, 3_02A-2, 3_02A-3 Q3: 3_02A-1, 3_02A-2, 3_02A-3 Q4:	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 12 (night) hour 2.69 Mg/hectare/month of activity 2.076E-04 g/m²/s (unmitigated) 1.723E-05 g/m²/s (mitigated)	AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 2_09-1, 3_02A-2, 3_02A-3, 3_02B Q2: 2_09-1, 3_02B Q3: 2_09-1, 3_02B Q4: 3_02A-1, 3_02B	Percentage active area, p Emission Factor Emission Rate	20.0 % 0.85 Mg/hectare/year 5.391E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q2: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_06-1, 2_06-2, 2_06-3, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q3: 1_09-1, 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_08, 2_09-2 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_09-1, 3_02A-2, 3_02A-3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2020

Location	Activity / Source ID	Parameter	Value	Notes
Western Support Area Emergency Access Road (flyover)	Heavy construction Source ID: Q1: WSA1, WSA2, WSA3, WSA4 Q2: WSA1, WSA2, WSA3, WSA4 Q3: WSA1, WSA2, WSA3, WSA4 Q4: WSA1, WSA2, WSA3, WSA4	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3
		Emission Factor	2.69 Mg/hectare/month of activity	Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works)
		Emission Rate	1.297E-04 g/m/s (unmitigated) 1.077E-05 g/m/s (mitigated)	'=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Western Support Area Emergency Access Road (at grade)	Heavy construction Source ID: Q1: WSA5 Q2: WSA5 Q3: WSA5 Q4: WSA5	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3
		Emission Factor	2.69 Mg/hectare/month of activity	Assume road width equals 12m, therefore multiply emission rate by 12m.
		Emission Rate	1.245E-03 g/m²/s (unmitigated) 1.034E-04 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
New APM Interchange Station (AIS)	Heavy construction Source ID: Q1: AIS1, AIS2, EVA6, EVA7, EVA8 Q2: AIS1, AIS2, EVA6, EVA7, EVA8 Q3: Q4:	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	AP42, Section 13.2.3.3
		Emission Factor	2.69 Mg/hectare/month of activity	=2.69*1000000/(10000*d*h*60*60)*p/100
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	
	Wind Erosion Source ID: (as above) Q1: AIS1, AIS2, EVA6, EVA7, EVA8	Percentage active area, p	100.00 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
Baggage Hall - Baggage Handling System (BHS)	Heavy construction Source ID: Q1: BHS1, BHS2, EVA9 Q2: BHS1, BHS2, EVA9 Q3: Q4:	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BHS1, BHS2, EVA9	Percentage active area, p	100.00 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
New APM Depot (NAD)	Heavy construction Source ID: Q1: NAD2 Q2: NAD1, NAD2 Q3: NAD1, NAD2 Q4:	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: NAD2	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
BHS and APM tunnel	Heavy construction Source ID: Q1: BAT1 Q2: BAT1, BAT2, NAB3, NAB4 Q3: Q4:	Percentage active area, p	100.00 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above) Q1: BAT1	Percentage active area, p	100.00 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100
T2 Expansion Area	Heavy construction Source ID: Q1: NAB1, NAB2, NAB3, NAB4, BAT2, NAD1 Q2: NAB1, NAB2 Q3: Q4:	Percentage active area, p	100.0 %	Assume % works area for heavy construction
		Mitigation efficiency	91.7 %	Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report
		No. of working days per month, d	30 days	
		No. of working hours per day, h	24 hour	
		Emission Factor	2.69 Mg/hectare/month of activity	AP42, Section 13.2.3.3
		Emission Rate	1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	=2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p	100.0 %	
		Emission Factor	0.85 Mg/hectare/year	AP42, Table 11.9-4
		Emission Rate	2.695E-06 g/m²/s	=0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2021

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: Q2: Q3: Q4: 3_01B-1, 3_01B-2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 3_02A-1, 3_02B Q2: 3_02A-1, 3_02B Q3: 3_02A-1, 3_02B Q4: 3_02A-1, 3_02B	Percentage active area, p Emission Factor Emission Rate	20.0 % 0.85 Mg/hectare/year 5.391E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 2_09-1, 3_02A-2, 3_02A-3 Q2: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 3_01B-1, 3_01B-2, 4_01-1, 4_01-3, 4_05-1 Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 3_01B-1, 3_01B-2, 4_01-1, 4_01-3, 4_05-1 Q4: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_01-1, 4_01-2, 4_01-3, 4_03-1, 4_03-2, 4_05-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Airside tunnels (AT)	Heavy construction Source ID: Q1: Q2: AT1, AT3 Q3: AT1, AT3 Q4: AT1, AT2, AT3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Midfield development (MD)	Heavy construction Source ID: Q1: MD Q2: MD Q3: MD Q4: MD	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
South Cargo Roadworks - at grade	Heavy construction Source ID: Q1: Q2: Q3: CA1, CA2 Q4: CA1, CA2	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.00 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.245E-03 g/m/s (unmitigated) 1.034E-04 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume road width equals 12m, therefore multiply emission rate by 12m. =2.69*1000000/(10000*d*h*60*60)*p/100 * 12
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.00 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2021

South Cargo Roadworks - viaduct	Heavy construction Source ID: Q1: Q2: Q3: CA3, CA4, CA5, CA6, CA7, CA8 Q4: CA3, CA4, CA5, CA6, CA7, CA8	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.297E-04 g/m/s (unmitigated) 1.077E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Roadworks Road 6 - viaduct (Concept F, Option 3)	Heavy construction Source ID: Q1: Q2: Q3: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37 Q4: RF1, RF2, RF3, RF4, RF5, RF6, RF7, RF8, RF9, RF10, RF11, RF12, RF13, RF14, RF15, RF16, RF17, RF18, RF19, RF20, RF21, RF22, RF23, RF24, RF25, RF26, RF27, RF28, RF29, RF30, RF31, RF32, RF33, RF34, RF35, RF36, RF37	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.297E-04 g/m/s (unmitigated) 1.077E-05 g/m/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 Assume 30m spacing between road piers (base:5mx 5m), therefore total active area equals 5m divided by 30m. Since the road is approximated to a line, assume width of 7.5m (i.e. 5m pile width + 50% extra for works) '=2.69*1000000/(10000*30*h*60*60)*p/100 * (5/30) * 7.5
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	 AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for 1-hour TSP Assessment (Tier 1) at Year 2022

Third Runway Work Areas

Works Area	Sources	Parameter		Remarks
Third Runway Land Formation	Heavy construction Source ID: For 24hrs activities: Q1: 3_02B Q2: Q3: Q4: 3_02B	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*30*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Wind Erosion (only)	Wind Erosion Source ID: Q1: 3_02A-1 Q2: 3_02A-1 Q3: 3_02B Q4:	Percentage active area, p Emission Factor Emission Rate	20.0 % 0.85 Mg/hectare/year 5.391E-07 g/m²/s	Based on scheme design of definition for sand fill materials consisting of coarse materials with size not exceeding 37.5mm and fines content not exceeding 20% AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Third Runway Other Construction Works/Facilities on newly formed land	Heavy construction Source ID: Q1: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-1, 3_01A-2, 3_01A-3, 4_01-1, 4_01-2, 4_01-3, 4_03-1, 4_03-2, 4_05-1 Q2: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_01A-3, 3_02B, 4_03-1, 4_05-1 Q3: 2_01, 2_02A, 2_02B-1, 2_02B-2, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 2_07A-1, 2_07A-2, 2_07B, 3_02A-1, 4_05-1 Q4: 2_01, 2_02A, 2_02B-1, 2_03A, 2_03B, 2_05A, 2_05B-1, 2_05B-2, 4_05-1	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100
Airside tunnels (AT)	Heavy construction Source ID: Q1: AT1, AT2, AT3 Q2: AT2, AT3 Q3: AT3 Q4: AT3	Percentage active area, p Mitigation efficiency No. of working days per month, d No. of working hours per day, h Emission Factor Emission Rate	100.0 % 91.7 % 30 days 24 hour 2.69 Mg/hectare/month of activity 1.038E-04 g/m²/s (unmitigated) 8.614E-06 g/m²/s (mitigated)	Assume % works area for heavy construction Water suppression 12 times a day Equation (3-2) in the USEPA's Control of Open Fugitive Dust Sources Final Report AP42, Section 13.2.3.3 =2.69*1000000/(10000*d*h*60*60)*p/100
	Wind Erosion Source ID: (as above)	Percentage active area, p Emission Factor Emission Rate	100.0 % 0.85 Mg/hectare/year 2.695E-06 g/m²/s	AP42, Table 11.9-4 =0.85*1000000/(10000*365*24*60*60)*p/100

Appendix 5.2.7 - Details of Dust Emission Sources for TSP Assessment (Tier 1)

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles

Description	Sources	Parameter	Emission Rate		Remarks
Barging Point	Unloading of spoils to barge Source ID: TBP1-6	Particle size multiplier, k	0.74		For TSP, AP-42, section 13.2.4, 11/06 ed.
		Moisture content, M	5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Mean wind speed, U	4.9	m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	9.30E-04	kg/Mg	$E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.)
		No. of operation hour	12	hr	26 days per month
		Maximum handling capcity for each barging point	47000	Mg/day	From engineer
			3.64E+00	kg/hr (Asphalt)	Assume 12 working hours (7:00 - 19:00) per day
		Emission height	0.5	m	
		Mitigation efficiency	90	%	Installation of flexible curtain and shelter with water spray at discharge point
		Emission Rate	1.01E-01	g/s (mitigated)	
Concrete Batching Plant	Paved haul road outside concrete batching plant - For **Laden** Vehicle Source ID: WAB-HR1 to WAB-HR13 WAB-P4-HR1 to WAB-P4-HR10 WC-HR1 to WC-HR13 WC-P4-HR1 to WC-P4-HR10 EAB-HR1 to EAB-HR4 EAC-HR1 to EAC-HR4 EC-HR1 to EC-HR14 EC-P2-HR1 to EC-P2-HR7	Particle size multiplier, k	3.23	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	28.3	tons	Full loading of Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		TSP emission factor, E			$E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			938	g/VKT	Asphalt Tipper
		No. of truck trips per day	96	trips/hr	From engineer, Asphalt Tipper Lorries in Asphalt Plant
			140	trips/hr	From Enginner, Asphalt Tipper Lorries in Concrete Batching Plant
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	6.25E-04	g/m/s (mitigated)	Asphalt Tipper Lorries in Asphalt Plant
			9.12E-04	g/m/s (mitigated)	Asphalt Tipper Lorries in Concrete Batching Plant
Concrete Batching Plant	Paved haul road outside concrete batching plant - For **Unladen** Vehicle Source ID: WAB-HR1 to WAB-HR13 WAB-P4-HR1 to WAB-P4-HR10 WC-HR1 to WC-HR13 WC-P4-HR1 to WC-P4-HR10 EAB-HR1 to EAB-HR4 EAC-HR1 to EAC-HR4 EC-HR1 to EC-HR14 EC-P2-HR1 to EC-P2-HR7	Particle size multiplier, k	3.23	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	8.24	tons	Empty loading of Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		TSP emission factor, E			$E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			266	g/VKT	Asphalt Tipper
		No. of truck trips per day	30	trips/hr	From engineer, Asphalt Tipper Lorries in Asphalt Plant
			140	trips/hr	From Enginner, Asphalt Tipper Lorries in Concrete Batching Plant
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	5.5E-05	g/m/s (mitigated)	Asphalt Tipper Lorries in Asphalt Plant
			2.59E-04	g/m/s (mitigated)	Asphalt Tipper Lorries in Concrete Batching Plant

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles

Description	Sources	Parameter	Emission Rate		Remarks
Concrete Batching Plant (Unloading of raw materials)	Unloading aggregate Source ID: (EP9) WAB-EP9, WAB-P4-EP9, WC-EP9, WC-P4-EP9 EAB-EP9, EC-EP9, EC-2-EP9, EC-3-EP9, EC-P2-EP9	Consumption Rate (Western + Eastern) Consumption Rate (Western only) Particle size multiplier, k Moisture content, M Mean wind speed, U Emission Factor, E	300 2000 150 500 0.74 2 4.9 3.35E-03 1.01 6.71 0.50 1.68	Mg/h (Asphalt) Mg/h (Concrete) Mg/h (Asphalt) Mg/h (Concrete) % m/s kg/Mg kg/hr (Asphalt - Westen + Eastern) kg/hr (Concrete - Western +Eastern) kg/hr (Asphalt - Westen only) kg/hr (Concrete - Western only)	From engineer: Asphalt: 300 ton/hr = 150 ton/hr x 2 plants From engineer: Concrete: 2000 ton/hr = 500 ton/hr x4 plants From engineer: Asphalt: 150 ton/hr From engineer: Concrete: 500 ton/hr For TSP, AP-42, section 13.2.4, 11/06 ed. Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C). HKOAMO 2012 annual average wind speed $E = k \times (0.0016) \times ((U/2.2)^{1.3}/(M/2)^{1.4})$ (AP-42, section 13.2.4, 11/06 ed.)
		Mitigation efficiency No. of operation hour Emission height Emission Rate (Western + Eastern) - **Period 2 to 4** Emission Rate (Western only) - **Period 1**	99 12 4 1.40E-03 4.66E-03 1.40E-03 4.66E-03	% hr m g/s (mitigated) (Asphalt) g/s (mitigated) (Concrete) g/s (mitigated) (Asphalt) g/s (mitigated) (Concrete)	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C). For each plant (150 ton/hr) Period 2 to 4: 150 ton/hr x 2 plants For each plant (500ton/hr) Period 2: 500ton/hr x 2 plants Period 3&4: 500ton/hr x 4 plants For 150 ton/hr only For 500 ton/hr only
Concrete Batching Plant (Cement / PFA Silos)	Small Cementitious Material Silos Source ID: (EP5-EP8) WAB-EP5 to EP8, WAB-P4-EP5 to EP8, WC-EP5 to EP8, WC-P4-EP5 to EP8 EAB-EP5 to EP8, EC-EP5 to EP8, EC-2-EP5 to EP8, EC-3-EP5 to EP8, EC-P2-EP5 to EP8	Density TSP emission factor Dust exhaust flow rate for each mixer (Total 4 sources) No. of operation hour No. of small cement silos Emission height Emission Rate (Total 4 sources) Emission Rate (Each source)	2.24 50 60 1200 26.8 535.7 12 4 21 or 22 3.72E-04 7.44E-03 9.30E-05 1.86E-03	Mg/m3 mg/m3 tons/hr (Asphalt) tons/hr (Concrete) m3/hr (Asphalt) m3/hr (Concrete) hr m g/s (mitigated) (Asphalt) g/s (mitigated) (Concrete) g/s (mitigated) (Asphalt) g/s (mitigated) (Concrete)	For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt" Concetration limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD Assume volume displacement by loading material For concrete & Asphalt density: 2.24 tons/m3 Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C). EP5: 21m, EP6-EP8: 22m Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
	PFA weight Hopper Source ID: (EP3-EP4) WAB-EP3 to EP4, WAB-P4-EP3 to EP4, WC-EP3 to EP4, WC-P4-EP3 to EP4 EAB-EP3 to EP4, EC-EP3 to EP4, EC-2-EP3 to EP4, EC-3-EP3 to EP4, EC-P2-EP3 to EP4	Emission Factor (without mitigation) Density TSP emission factor Production rate (Total 2 sources) Mitigation efficiency Emission height Emission Rate (Total 2 sources)	2.60E-03 2.24 5.82E-03 25 429 99 13 4.04E-04 6.94E-03	kg/Mg Mg/m3 kg/m3 m3/hr (Asphalt) m3/hr (Concrete) % m g/s (mitigated) (Asphalt) g/s (mitigated) (Concrete)	Weight hopper loading (uncontrolled), AP-42, section 11.12-4, Table 11.12-1, 6/06 ed. For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt" From engineer Total enclosure and fabric filter
Concrete Batching Plant (Mixing Tower)	Mixer Source ID: (EP1-EP2) WAB-EP1 to EP2, WAB-P4-EP1 to EP2, WC-EP1 to EP2, WC-P4-EP1 to EP2 EAB-EP1 to EP2, EC-EP1 to EP2, EC-2-EP1 to EP2, EC-3-EP1 to EP2, EC-P2-EP1 to EP2	Density TSP emission factor Dust exhaust flow rate for each mixer (Total 2 sources) No. of operation hour No. of small cement silos Emission height Emission Rate (Total 2 sources)	2.24 50 60 1200 26.8 535.7 12 2 13 3.72E-04 7.44E-03	Mg/m3 mg/m3 tons/hr (Asphalt) tons/hr (Concrete) m3/hr (Asphalt) m3/hr (Concrete) hr m g/s (mitigated) (Asphalt) g/s (mitigated) (Concrete)	For Concrete & Asphalt density Refer to this web "http://www.aqua-calc.com/page/density-table/substance/concrete-coma-and-blank-asphalt" Concetration limit, Annex I, A Guidance Note on the Best Praticable Means for Cement Works (Concrete Batching Plant), EPD Assume volume displacement by loading material For concrete & Asphalt density: 2.24 tons/m3
Stockpile within Asphalt batching plant in western location	Material handling and storage piles Source ID: WABA1, WABA1-P4 WABA2, WABA2-P4	Percentage open stockpile area, p Particle size multiplier, k Moisture content, M Average wind speed, U Emission Factor, E Monthly output Maximum hourly output, op Area of the Asphalt stockpile, A Area of the Aggregate stockpile, A Emission Rate (Asphalt stockpile) Emission Rate (Aggregate stockpile)	20 0.74 5 4.9 0.000929696 335 5,250 1.1 16.8 2.7 42.1 234 2,200 2.96247E-06 5.92494E-07 4.93937E-06 9.87874E-07	% % m/s kg/Mg m3/month (Asphalt) m3/month (Aggregate) m3/hr (Asphalt) m3/hr (Aggregate) Mg/hr (Asphalt) Mg/hr (Aggregate) m2 (Asphalt) m2 (Aggregate) g/m²/s (unmitigated) g/m²/s (mitigated) g/m²/s (unmitigated) g/m²/s (mitigated)	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet. k (particle size < 30μm) Assume worst case scenario HKOAMO 2012 annual average wind speed $E = k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$ From engineer From engineer 26 days per month, 12 working hours per day Assume capacity of dump truck is 6m^3 and 15 tons Unmitigated Emission Rate=E*1000*op/(A*60*60) Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p Emission Factor Emission Rate	100 20 0.85 2.69533E-06 5.39066E-07	% (unmitigated) % (mitigated) Mg/hectare/year g/m²/s (unmitigated) g/m²/s (mitigated)	80% stockpiling area is covered by impervious sheets AP42, Section 11.9.4 =0.85*1000000/(10000*365*24*60*60)*p/100
Milled Material, Crushed Aggregate and Sub-base Stockpile in western location	Material handling and storage piles Source ID: WAR1, WAR1-P4 WCAS1, WCAS1-P4 WSS1, WSS1-P4	Percentage open stockpile area, p Particle size multiplier, k Moisture content, M Average wind speed, U Emission Factor, E Monthly output Maximum hourly output, op Area of the Milled Material stockpile, A Area of the Crushed Aggregate stockpile, A Area of the Sub-base stockpile, A Emission Rate (Milled Material stockpile) Emission Rate (Crushed Aggregate stockpile) Emission Rate (Sub-base stockpile)	20 0.74 5 4.9 0.000929696 422 15,182 16,275 1.4 48.7 52.2 3.4 121.6 130.4 279 5,822 6,209 3.1328E-06 6.26559E-07 5.3963E-06 1.07926E-06 5.42358E-06 1.08472E-06	% % m/s kg/Mg m3/month (Milled Material) m3/month (Crushed Aggregate) m3/month (Sub-base stockpile) m3/hr (Milled Material) m3/hr (Crushed Aggregate) m3/hr (Sub-base stockpile) Mg/hr (Milled Material) Mg/hr (Crushed Aggregate) Mg/hr (Sub-base stockpile) m2 (Milled Material) m2 (Crushed Aggregate) m2 (Sub-base stockpile) g/m²/s (unmitigated) g/m²/s (mitigated) g/m²/s (unmitigated) g/m²/s (mitigated) g/m²/s (unmitigated) g/m²/s (mitigated)	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet. k (particle size < 30μm) Assume worst case scenario HKOAMO 2012 annual average wind speed $E = k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$ From engineer From engineer From engineer 26 days per month, 12 working hours per day Assume capacity of dump truck is 6m^3 and 15 tons Unmitigated Emission Rate=E*1000*op/(A*60*60) Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p Emission Factor Emission Rate	100 20 0.85 2.69533E-06 5.39066E-07	% (unmitigated) % (mitigated) Mg/hectare/year g/m²/s (unmitigated) g/m²/s (mitigated)	80% stockpiling area is covered by impervious sheets AP42, Section 11.9.4 =0.85*1000000/(10000*365*24*60*60)*p/100

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles

Description	Sources	Parameter	Emission Rate	Remarks
Stockpile within Asphalt batching plant in eastern location	Material handling and storage piles Source ID: EABA1, EABA2	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.74	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000929696 kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	67 m3/month (Asphalt)	From engineer
			1,050 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	0.2 m3/hr (Asphalt)	26 days per month, 12 working hours per day
			3.4 m3/hr (Aggregate)	
			0.5 Mg/hr (Asphalt)	Assume capacity of dump truck is 6m^3 and 15 tons
			8.4 Mg/hr (Aggregate)	
		Area of the Asphalt stockpile, A	154 m^2(Asphalt)	
		Area of the Aggregate stockpile, A	562 m^2(Aggregate)	
		Emission Rate (Asphalt stockpile)	9.02135E-07 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			1.80427E-07 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	3.86851E-06 g/m²/s (unmitigated)	
			7.73703E-07 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor	0.85 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	2.69533E-06 g/m²/s (unmitigated)	=0.85*1000000/(10000*365*24*60*60)*p/100
			5.39066E-07 g/m²/s (mitigated)	
Stockpile within Airfield batching plant in eastern location	Material handling and storage piles Source ID: EACC1, EACA1	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.74	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000929696 kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	2,540 m3/month (Cement)	From engineer
			13,824 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	8.1 m3/hr (Cement)	26 days per month, 12 working hours per day
			44.3 m3/hr (Aggregate)	
			20.3 Mg/hr (Cement)	Assume capacity of dump truck is 6m^3 and 15 tons
			110.8 Mg/hr (Aggregate)	
		Area of the Cement stockpile, A	1,163 m^2 (Cement)	
		Area of the Aggregate stockpile, A	5,329 m^2(Aggregate)	
		Emission Rate (Cement stockpile)	4.5194E-06 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			9.0388E-07 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	5.36789E-06 g/m²/s (unmitigated)	
			1.07358E-06 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor	0.85 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	2.69533E-06 g/m²/s (unmitigated)	=0.85*1000000/(10000*365*24*60*60)*p/100
			5.39066E-07 g/m²/s (mitigated)	
Stockpile within Concrete Batching Plant in eastern location	Material handling and storage piles Source ID: ECC1_2, ECC1_3, ECC1-P2 ECA1_2, ECA1_3, ECA1-P2	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.74	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000929696 kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	43,270 m3/month (Cement)	From engineer
			173,079 m3/month (Aggregate)	From engineer
		Maximum hourly output, op	138.7 m3/hr (Cement)	26 days per month, 12 working hours per day
			554.7 m3/hr (Aggregate)	
			346.7 Mg/hr (Cement)	Assume capacity of dump truck is 6m^3 and 15 tons
			1386.8 Mg/hr (Aggregate)	
		Area of the Cement stockpile, A	3,944 m2 (Cement)	
		Area of the Aggregate stockpile, A	14,520 m2(Aggregate)	
		Emission Rate (Cement stockpile)	2.27033E-05 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			4.54066E-06 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
		Emission Rate (Aggregate stockpile)	2.46657E-05 g/m²/s (unmitigated)	
			4.93315E-06 g/m²/s (mitigated)	
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor	0.85 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	2.69533E-06 g/m²/s (unmitigated)	=0.85*1000000/(10000*365*24*60*60)*p/100
			5.39066E-07 g/m²/s (mitigated)	
Crushed Aggregate Stockpile in eastern location	Material handling and storage piles Source ID: ECA2, ECA2-P2	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.74	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000929696 kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	4,364 m3/month	From engineer
		Maximum hourly output, op	14.0 m3/hr	26 days per month, 12 working hours per day
			35.0 Mg/hr	Assume capacity of dump truck is 6m^3 and 15 tons
		Area of the stockpile, A	1,866 m2	
		Emission Rate	4.83836E-06 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			9.67672E-07 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor	0.85 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	2.69533E-06 g/m²/s (unmitigated)	=0.85*1000000/(10000*365*24*60*60)*p/100
			5.39066E-07 g/m²/s (mitigated)	
C&D Stockpile near seawall	Material handling and storage piles Source ID: CD1	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.74	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000929696 kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	1,167 m3/month	From engineer
		Maximum hourly output, op	3.7 m3/hr	26 days per month, 12 working hours per day
			7.5 Mg/hr	Density of C&D material: 2Mg/m3 (from engineer)
		Area of the stockpile, A	3,900 m2	
		Emission Rate	4.95218E-07 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			9.90435E-08 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor	0.85 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	2.69533E-06 g/m²/s (unmitigated)	=0.85*1000000/(10000*365*24*60*60)*p/100
			5.39066E-07 g/m²/s (mitigated)	
C&D Stockpile at midfield	Material handling and storage piles Source ID: CD2, CD3	Percentage open stockpile area, p	20 %	80% stockpiling area is covered by impervious sheets and all dusty material should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.
		Particle size multiplier, k	0.74	k (particle size < 30μm)
		Moisture content, M	5 %	Assume worst case scenario
		Average wind speed, U	4.9 m/s	HKOAMO 2012 annual average wind speed
		Emission Factor, E	0.000929696 kg/Mg	$E=k*0.0016*[(U/2.2)^{1.3}/(M/2)^{1.4}]$
		Monthly output	33,222 m3/month	From engineer
		Maximum hourly output, op	106.5 m3/hr	26 days per month, 12 working hours per day
			213.0 Mg/hr	Density of C&D material: 2Mg/m3 (from engineer)
		Area of the stockpile, A	8,100 m2	
		Emission Rate	6.78981E-06 g/m²/s (unmitigated)	Unmitigated Emission Rate=E*1000*op/(A*60*60)
			1.35796E-06 g/m²/s (mitigated)	Mitigated Emission Rate'=E*1000*op/(A*60*60)*p/100
	Wind erosion Source ID: As above	Percentage open stockpile area, p	100 % (unmitigated)	
			20 % (mitigated)	80% stockpiling area is covered by impervious sheets
		Emission Factor	0.85 Mg/hectare/year	AP42, Section 11.9.4
		Emission Rate	2.69533E-06 g/m²/s (unmitigated)	=0.85*1000000/(10000*365*24*60*60)*p/100
			5.39066E-07 g/m²/s (mitigated)	

Barging Points, Crushing Plant, Concrete and Asphalt Batching Plants, C&D Stockpile and other Stockpiles

Description	Sources	Parameter	Emission Rate		Remarks
Crushing Plant	Screening Source ID: CP1, CP2	TSP emission factor	50	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Mineral Works (Stone Crushing Plants), EPD
		Density of rock	1760	Kg/m3	Assume the same as approved EIA South East New Territories (SENT) Landfill Extension (EIA-143/2007) Annex A2
		Maximum handling capcity	700	Mg/hr	From engineer
		No. of operation hour	12	hr	
		Emission height	15	m	
		Emission Rate	5.52E-03	g/s (mitigated)	
Crushing Plant	Tertiary Crushing Source ID: CP1, CP2	TSP emission factor	50	mg/m3	Concretration limit, Annex I, A Guidance Note on the Best Praticable Means for Mineral Works (Stone Crushing Plants), EPD
		Density of rock	1760	Kg/m3	Assume the same as approved EIA South East New Territories (SENT) Landfill Extension (EIA-143/2007) Annex A2
		Maximum handling capcity	700	Mg/hr	From engineer
		No. of operation hour	12	hr	
		Emission height	15	m	
		Emission Rate	5.52E-03	g/s (mitigated)	
Crushing Plant	Paved haul road outside crushing plant - For **Laden** Vehicle Source ID: WAB-HR1 to WAB-HR13 WC-HR1 to WC-HR13	Particle size multiplier, k	3.23	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	28.3	tons	Full loading of truck, assume the same as Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		TSP emission factor, E			$E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			938	g/VKT	Truck
		No. of truck trips per day	66	trips/hr	From engineer: 700Mg/hr * (1/(6m3/veh)) * (1/1760 kg/m3) * 1000 Assume density = 1760kg/m3, truck loading = 6m3/veh
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	4.32E-04	g/m/s (mitigated)	Truck for crushing plant
Crushing Plant	Paved haul road outside crushing plant - For **Unladen** Vehicle Source ID: WAB-HR1 to WAB-HR13 WC-HR1 to WC-HR13	Particle size multiplier, k	3.23	g/VKT	AP-42, Section 13.2.1, Table 13.2.1-1, 01/11 ed.
		Road surface silt loading, sL	12	g/m2	AP-42, Section 13.2.1, Table 13.2.1-3, 01/11 ed.
		Average truck weight, W	8.24	tons	Empty loading of truck, assume the same as Asphalt Tipper, engineering estimate
		Emission height	0.5	m	Assumed that vehicle will lift dust from the road surface and disperse from 0.5m height
		TSP emission factor, E			$E = k \times (sL)^{0.91} \times (W)^{1.02}$ (AP-42, section 13.2.1, 01/11 ed.)
			266	g/VKT	Truck
		No. of truck trips per day	66	trips/hr	From engineer: 700Mg/hr * (1/(6m3/veh)) * (1/1760 kg/m3) * 1000 Assume density = 1760kg/m3, truck loading = 6m3/veh
		No. of operation hour	12	hr	
		% of dust suppression	97.5	%	Assume as the same as Express Rail Link and Extracted from SP License of XRL (Appendix C).
		Emission Rate	1.2E-04	g/m/s (mitigated)	Truck for crushing plant