

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 2

At the discrete receptors:

1: 7.75E+00 @Hr24,02/07/08	4: 3.77E+00 @Hr24,27/06/07
2: 6.34E+00 @Hr24,17/09/07	5: 8.85E-01 @Hr24,18/11/08
3: 1.56E+01 @Hr24,04/09/07	6: 1.83E+01 @Hr24,27/06/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 3

At the discrete receptors:

1: 2.45E-01 @Hr24,02/07/08	4: 1.12E-01 @Hr24,29/04/07
2: 2.21E-01 @Hr24,17/09/07	5: 3.73E-02 @Hr24,18/11/08
3: 5.63E-01 @Hr24,05/11/07	6: 4.68E-01 @Hr24,29/04/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 4

At the discrete receptors:

1: 5.50E-03 @Hr24,02/07/08	4: 2.53E-03 @Hr24,29/04/07
2: 4.98E-03 @Hr24,17/09/07	5: 8.37E-04 @Hr24,18/11/08
3: 1.27E-02 @Hr24,05/11/07	6: 1.05E-02 @Hr24,29/04/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 1

At the discrete receptors:

1: 2.89E+00 @Hr24,17/08/07	4: 9.17E-01 @Hr24,01/08/07
2: 2.30E+00 @Hr24,06/08/07	5: 1.53E-01 @Hr24,31/03/07
3: 3.25E+00 @Hr24,01/02/08	6: 4.54E+00 @Hr24,01/08/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 2

At the discrete receptors:

1: 1.35E+00 @Hr24,17/08/07	4: 4.28E-01 @Hr24,01/08/07
2: 1.07E+00 @Hr24,06/08/07	5: 7.15E-02 @Hr24,31/03/07
3: 1.52E+00 @Hr24,01/02/08	6: 2.12E+00 @Hr24,01/08/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 3

At the discrete receptors:

1: 4.34E-02 @Hr24,17/08/07	4: 1.66E-02 @Hr24,01/08/07
2: 3.79E-02 @Hr24,06/08/07	5: 3.09E-03 @Hr24,31/03/07
3: 4.42E-02 @Hr24,21/06/08	6: 7.54E-02 @Hr24,01/08/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 4

At the discrete receptors:

1: 9.75E-04 @Hr24,17/08/07	4: 3.72E-04 @Hr24,01/08/07
2: 8.51E-04 @Hr24,06/08/07	5: 6.94E-05 @Hr24,31/03/07
3: 9.94E-04 @Hr24,21/06/08	6: 1.69E-03 @Hr24,01/08/07

Stockpiled Soils – Fugitive Emissions

1

Chullora – Stockpile soils fugitive with controls

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Soil handling fugitive with controls

SOURCE GROUPS

Group No.	Members
-----------	---------

1	FTC
2	FPC
3	FBEP
4	FBPP

1

Chullora - Soil handling fugitive with controls

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: FTC

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6248927	29m	10m	15m	0deg	5m	0m

(Constant) emission rate = 6.00E-07 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FPC

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6248927	29m	10m	15m	0deg	5m	0m

(Constant) emission rate = 3.10E-06 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FBEP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6248927	29m	10m	15m	0deg	5m	0m

(Constant) emission rate = 1.20E-06 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FBPP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6248927	29m	10m	15m	0deg	5m	0m

(Constant) emission rate = 2.70E-06 grams/second per square metre
No gravitational settling or scavenging.

1

Chullora - Soil handling fugitive with controls

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5	6	320850	6248820	29.0	1.5

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 1

At the discrete receptors:

1: 7.44E-01 @Hr05,26/05/08	4: 5.16E-01 @Hr22,09/11/07
2: 4.53E-01 @Hr02,27/01/07	5: 9.54E-02 @Hr03,23/01/07
3: 9.44E-01 @Hr05,29/09/08	6: 1.98E+00 @Hr22,09/11/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 2

At the discrete receptors:

1: 3.84E+00 @Hr05,26/05/08	4: 2.67E+00 @Hr22,09/11/07
2: 2.34E+00 @Hr02,27/01/07	5: 4.93E-01 @Hr03,23/01/07
3: 4.88E+00 @Hr05,29/09/08	6: 1.02E+01 @Hr22,09/11/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 3

At the discrete receptors:

1: 1.49E+00 @Hr05,26/05/08	4: 1.03E+00 @Hr22,09/11/07
2: 9.06E-01 @Hr02,27/01/07	5: 1.91E-01 @Hr03,23/01/07
3: 1.89E+00 @Hr05,29/09/08	6: 3.96E+00 @Hr22,09/11/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 4

At the discrete receptors:

1: 3.35E+00 @Hr05,26/05/08	4: 2.32E+00 @Hr22,09/11/07
2: 2.04E+00 @Hr02,27/01/07	5: 4.29E-01 @Hr03,23/01/07
3: 4.25E+00 @Hr05,29/09/08	6: 8.90E+00 @Hr22,09/11/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 1

At the discrete receptors:

1: 7.51E-02 @Hr24,19/07/08	4: 3.50E-02 @Hr24,26/12/08
2: 5.37E-02 @Hr24,30/03/08	5: 1.19E-02 @Hr24,03/03/07
3: 8.19E-02 @Hr24,26/07/08	6: 1.34E-01 @Hr24,26/12/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 2

At the discrete receptors:

1: 3.88E-01 @Hr24,19/07/08	4: 1.81E-01 @Hr24,26/12/08
2: 2.77E-01 @Hr24,30/03/08	5: 6.14E-02 @Hr24,03/03/07
3: 4.23E-01 @Hr24,26/07/08	6: 6.94E-01 @Hr24,26/12/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 3

At the discrete receptors:

1: 1.50E-01 @Hr24,19/07/08	4: 7.00E-02 @Hr24,26/12/08
2: 1.07E-01 @Hr24,30/03/08	5: 2.38E-02 @Hr24,03/03/07
3: 1.64E-01 @Hr24,26/07/08	6: 2.68E-01 @Hr24,26/12/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 4

At the discrete receptors:

1: 3.38E-01 @Hr24,19/07/08	4: 1.57E-01 @Hr24,26/12/08
2: 2.42E-01 @Hr24,30/03/08	5: 5.35E-02 @Hr24,03/03/07
3: 3.69E-01 @Hr24,26/07/08	6: 6.04E-01 @Hr24,26/12/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 1

At the discrete receptors:

1: 1.36E-02 @Hr24,20/09/08	4: 4.22E-03 @Hr24,17/07/07
2: 1.07E-02 @Hr24,25/06/07	5: 1.13E-03 @Hr24,01/04/07
3: 1.31E-02 @Hr24,08/08/08	6: 1.78E-02 @Hr24,17/07/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 2

At the discrete receptors:

1: 7.01E-02 @Hr24,20/09/08	4: 2.18E-02 @Hr24,17/07/07
2: 5.54E-02 @Hr24,25/06/07	5: 5.84E-03 @Hr24,01/04/07
3: 6.79E-02 @Hr24,08/08/08	6: 9.18E-02 @Hr24,17/07/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 3

At the discrete receptors:

1: 2.72E-02 @Hr24,20/09/08	4: 8.44E-03 @Hr24,17/07/07
2: 2.15E-02 @Hr24,25/06/07	5: 2.26E-03 @Hr24,01/04/07
3: 2.63E-02 @Hr24,08/08/08	6: 3.55E-02 @Hr24,17/07/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 4

At the discrete receptors:

1: 6.11E-02 @Hr24,20/09/08	4: 1.90E-02 @Hr24,17/07/07
2: 4.83E-02 @Hr24,25/06/07	5: 5.09E-03 @Hr24,01/04/07
3: 5.91E-02 @Hr24,08/08/08	6: 8.00E-02 @Hr24,17/07/07

Haulage Roads – Fugitive

Chullora - Haulage roads controlled conditions

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates 0.60,0.60	
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Haulage roads controlled conditions

SOURCE GROUPS

Group No.	Members
-----------	---------

1	HAT
2	HAP

1

Chullora - Haulage roads controlled conditions

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: HAT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6248850	29m	5m	200m	0deg	5m	0m

(Constant) emission rate = 1.30E-05 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: HAP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6248850	29m	5m	200m	0deg	5m	0m

(Constant) emission rate = 7.90E-06 grams/second per square metre
No gravitational settling or scavenging.

1

Chullora - Haulage roads controlled conditions

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5	6	320850	6248820	29.0	1.5

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 1

At the discrete receptors:

1: 2.53E+01 @Hr22,01/04/08	4: 3.69E+01 @Hr22,07/05/07
2: 2.17E+01 @Hr03,15/04/07	5: 1.09E+01 @Hr03,23/01/07
3: 1.55E+02 @Hr23,02/12/08	6: 7.01E+01 @Hr03,24/02/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 2

At the discrete receptors:

1: 1.54E+01 @Hr22,01/04/08	4: 2.24E+01 @Hr22,07/05/07
2: 1.32E+01 @Hr03,15/04/07	5: 6.63E+00 @Hr03,23/01/07
3: 9.44E+01 @Hr23,02/12/08	6: 4.26E+01 @Hr03,24/02/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 1

At the discrete receptors:

1: 5.07E+00 @Hr24,19/07/08	4: 4.08E+00 @Hr24,09/11/07
2: 4.25E+00 @Hr24,30/03/08	5: 1.42E+00 @Hr24,03/03/07
3: 1.84E+01 @Hr24,31/07/08	6: 1.14E+01 @Hr24,19/07/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 2

At the discrete receptors:

1: 3.08E+00 @Hr24,19/07/08	4: 2.48E+00 @Hr24,09/11/07
2: 2.58E+00 @Hr24,30/03/08	5: 8.60E-01 @Hr24,03/03/07
3: 1.12E+01 @Hr24,31/07/08	6: 6.93E+00 @Hr24,19/07/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 1

At the discrete receptors:

1: 1.62E+00 @Hr24,31/07/07	4: 6.10E-01 @Hr24,17/07/07
2: 1.34E+00 @Hr24,25/06/07	5: 1.58E-01 @Hr24,01/04/07
3: 2.70E+00 @Hr24,07/08/08	6: 2.83E+00 @Hr24,29/07/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 2

At the discrete receptors:

1: 9.87E-01 @Hr24,31/07/07	4: 3.71E-01 @Hr24,17/07/07
2: 8.13E-01 @Hr24,25/06/07	5: 9.58E-02 @Hr24,01/04/07
3: 1.64E+00 @Hr24,07/08/08	6: 1.72E+00 @Hr24,29/07/07

Cement Stabilisation -Variable Emissions

Chullora - Stabilisation Variable Emissions Controlled Conditions

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Stabilisation Variable Emissions Controlled Conditions

SOURCE GROUPS

Group No.	Members
-----------	---------

1	VTT
2	VTPM
3	VTBP

1

Chullora - Stabilisation Variable Emissions Controlled Conditions

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: VTT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 7.40E-06 grams/second per square metre

Hourly multiplicative factors will be used with this emission factor.

No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VTPM

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 3.50E-06 grams/second per square metre

Hourly multiplicative factors will be used with this emission factor.

No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VTBP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320720	6248875	29m	35m	50m	0deg	5m	0m

(Constant) emission rate = 3.50E-06 grams/second per square metre

Hourly multiplicative factors will be used with this emission factor.

No gravitational settling or scavenging.

1

Chullora - Stabilisation Variable Emissions Controlled Conditions

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5	6	320850	6248820	29.0	1.5

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

HOURLY VARIABLE EMISSION FACTOR INFORMATION

The input emission rates specified above will be multiplied by hourly varying factors entered via the input file:

C:\Users\sdorairaj\Ausplume\superceded 2010\Chulvar.csv

For each stack source, hourly values within this file will be added to each declared exit velocity (m/sec) and temperature (K).

Title of input hourly emission factor file is:
Variable Emissions,,

HOURLY EMISSION FACTOR SOURCE TYPE ALLOCATION

Prefix V allocated: VTT VTPM VTBP

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3) AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 1

At the discrete receptors:

1: 4.32E+00 @Hr14,17/09/07	4: 4.71E+00 @Hr13,03/10/07
2: 1.81E+00 @Hr15,13/06/08	5: 4.75E-01 @Hr16,26/01/07
3: 2.30E+00 @Hr15,20/07/07	6: 7.45E+01 @Hr16,13/12/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3) AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 2

At the discrete receptors:

1: 2.04E+00 @Hr14,17/09/07	4: 2.23E+00 @Hr13,03/10/07
2: 8.57E-01 @Hr15,13/06/08	5: 2.25E-01 @Hr16,26/01/07
3: 1.09E+00 @Hr15,20/07/07	6: 3.52E+01 @Hr16,13/12/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3) AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 3

At the discrete receptors:

1: 5.20E+00 @Hr12,22/05/07	4: 4.49E+00 @Hr16,15/09/08
2: 3.36E+00 @Hr12,17/09/07	5: 9.99E-01 @Hr15,18/11/08
3: 7.08E+00 @Hr10,24/06/07	6: 2.01E+01 @Hr15,03/10/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3) AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 1

At the discrete receptors:

1: 1.23E+00 @Hr24,17/09/07	4: 5.92E-01 @Hr24,29/04/07
2: 3.01E-01 @Hr24,11/07/07	5: 8.03E-02 @Hr24,18/11/08
3: 7.22E-01 @Hr24,04/09/07	6: 1.97E+01 @Hr24,16/10/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3) AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 2

At the discrete receptors:

1: 5.83E-01 @Hr24,17/09/07	4: 2.80E-01 @Hr24,29/04/07
2: 1.42E-01 @Hr24,11/07/07	5: 3.80E-02 @Hr24,18/11/08
3: 3.41E-01 @Hr24,04/09/07	6: 9.30E+00 @Hr24,16/10/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3) AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 3

At the discrete receptors:

1: 1.08E+00 @Hr24,22/05/07	4: 6.28E-01 @Hr24,29/04/07
2: 9.12E-01 @Hr24,17/09/07	5: 1.91E-01 @Hr24,18/11/08
3: 2.14E+00 @Hr24,05/11/07	6: 3.06E+00 @Hr24,16/10/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 1

At the discrete receptors:

1: 2.15E-01 @Hr24,06/08/07	4: 8.96E-02 @Hr24,01/08/07
2: 6.21E-02 @Hr24,14/07/08	5: 8.67E-03 @Hr24,31/03/07
3: 7.75E-02 @Hr24,19/02/08	6: 3.66E+00 @Hr24,17/08/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 2

At the discrete receptors:

1: 1.02E-01 @Hr24,06/08/07	4: 4.24E-02 @Hr24,01/08/07
2: 2.94E-02 @Hr24,14/07/08	5: 4.10E-03 @Hr24,31/03/07
3: 3.67E-02 @Hr24,19/02/08	6: 1.73E+00 @Hr24,17/08/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 3

At the discrete receptors:

1: 2.26E-01 @Hr24,18/08/07	4: 9.52E-02 @Hr24,01/08/07
2: 1.58E-01 @Hr24,06/08/07	5: 1.56E-02 @Hr24,31/03/07
3: 1.76E-01 @Hr24,01/02/08	6: 6.31E-01 @Hr24,17/08/07

Cement Stabilisation – fugitive

1

Chullora - Cement Stabilisation fugitive with controls

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Cement Stabilisation fugitive with controls

SOURCE GROUPS

Group No.	Members
-----------	---------

1	TT
2	TPM
3	VTBEP

1

Chullora - Cement Stabilisation fugitive with controls

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: TT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320720	6248875	29m	35m	50m	0deg	5m	0m

(Constant) emission rate = 1.30E-06 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TPM

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320720	6248875	29m	35m	50m	0deg	5m	0m

(Constant) emission rate = 6.00E-07 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VTBEF

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320720	6248875	29m	35m	50m	0deg	5m	0m

(Constant) emission rate = 3.30E-06 grams/second per square metre
No gravitational settling or scavenging.

1

Chullora - Cement Stabilisation fugitive with controls

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5	6	320850	6248820	29.0	1.5

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 1

At the discrete receptors:

1: 1.24E+01 @Hr05,16/05/07	4: 1.19E+01 @Hr24,28/11/07
2: 8.25E+00 @Hr03,28/03/07	5: 2.63E+00 @Hr03,23/01/07
3: 1.59E+01 @Hr01,26/12/07	6: 3.02E+01 @Hr04,28/03/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 2

At the discrete receptors:

1: 5.70E+00 @Hr05,16/05/07	4: 5.49E+00 @Hr24,28/11/07
2: 3.81E+00 @Hr03,28/03/07	5: 1.21E+00 @Hr03,23/01/07
3: 7.32E+00 @Hr01,26/12/07	6: 1.39E+01 @Hr04,28/03/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 3

At the discrete receptors:

1: 3.14E+01 @Hr05,16/05/07	4: 3.02E+01 @Hr24,28/11/07
2: 2.09E+01 @Hr03,28/03/07	5: 6.67E+00 @Hr03,23/01/07
3: 4.03E+01 @Hr01,26/12/07	6: 7.66E+01 @Hr04,28/03/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 1

At the discrete receptors:

1: 1.36E+00 @Hr24,07/07/07	4: 1.00E+00 @Hr24,09/11/07
2: 1.15E+00 @Hr24,30/03/08	5: 3.29E-01 @Hr24,03/03/07
3: 1.97E+00 @Hr24,27/07/08	6: 3.25E+00 @Hr24,11/10/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 2

At the discrete receptors:

1: 6.26E-01 @Hr24,07/07/07	4: 4.62E-01 @Hr24,09/11/07
2: 5.29E-01 @Hr24,30/03/08	5: 1.52E-01 @Hr24,03/03/07
3: 9.10E-01 @Hr24,27/07/08	6: 1.50E+00 @Hr24,11/10/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
AVERAGING TIME = 24 HOURS; SOURCE GROUP No. 3

At the discrete receptors:

1: 3.44E+00 @Hr24,07/07/07	4: 2.54E+00 @Hr24,09/11/07
2: 2.91E+00 @Hr24,30/03/08	5: 8.35E-01 @Hr24,03/03/07
3: 5.01E+00 @Hr24,27/07/08	6: 8.26E+00 @Hr24,11/10/08

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 1

At the discrete receptors:

1: 2.45E-01 @Hr24,13/09/08	4: 1.30E-01 @Hr24,26/07/07
2: 2.25E-01 @Hr24,25/06/07	5: 3.19E-02 @Hr24,01/04/07
3: 2.90E-01 @Hr24,07/08/08	6: 5.84E-01 @Hr24,31/07/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 2

At the discrete receptors:

1: 1.13E-01 @Hr24,13/09/08	4: 6.02E-02 @Hr24,26/07/07
2: 1.04E-01 @Hr24,25/06/07	5: 1.47E-02 @Hr24,01/04/07
3: 1.34E-01 @Hr24,07/08/08	6: 2.69E-01 @Hr24,31/07/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m3)
90-DAY RUNNING AVERAGES; SOURCE GROUP No. 3

At the discrete receptors:

1: 6.23E-01 @Hr24,13/09/08	4: 3.31E-01 @Hr24,26/07/07
----------------------------	----------------------------

2: 5.72E-01 @Hr24,25/06/07 5: 8.10E-02 @Hr24,01/04/07
3: 7.35E-01 @Hr24,07/08/08 6: 1.48E+00 @Hr24,31/07/07

Odour Sources

1

Chullora - Odour Sources with controls

Concentration or deposition	Concentration
Emission rate units	OUV/second
Concentration units	Odour_Units
Units conversion factor	1.00E+00
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours

Chullora - Odour Sources with controls

SOURCE GROUPS

Group No.	Members
-----------	---------

1	VEXOU
2	FOU
3	TOUCS

1

Chullora - Odour Sources with controls

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: VEXOU

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6249827	29m	10m	15m	15deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FOU

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6248927	29m	10m	15m	15deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TOUCS

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320720	6248875	29m	35m	50m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

1

Chullora - Odour Sources with controls

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5	6	320850	6248820	29.0	1.5

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in Odour_Units)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 1

At the discrete receptors:

1: 8.83E-01 @Hr05,27/09/07	4: 6.14E-01 @Hr21,24/10/08
2: 1.11E+00 @Hr21,27/09/08	5: 3.75E-01 @Hr04,23/01/07
3: 1.59E+00 @Hr22,14/02/07	6: 7.76E-01 @Hr23,04/10/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in Odour_Units)
AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 2

At the discrete receptors:

1: 8.83E-01 @Hr05,27/09/07	4: 6.14E-01 @Hr21,24/10/08
2: 1.11E+00 @Hr21,27/09/08	5: 3.75E-01 @Hr04,23/01/07
3: 1.59E+00 @Hr22,14/02/07	6: 7.76E-01 @Hr23,04/10/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in Odour_Units)
 AVERAGING TIME = 1 HOUR; SOURCE GROUP No. 3

At the discrete receptors:

1: 6.94E-01 @Hr05,16/05/07	4: 6.67E-01 @Hr24,28/11/07
2: 4.63E-01 @Hr03,28/03/07	5: 1.48E-01 @Hr03,23/01/07
3: 8.91E-01 @Hr01,26/12/07	6: 1.69E+00 @Hr04,28/03/07

Dust Deposition

1

Chullora - Haulage roads controlled conditions dust deposition

Concentration or deposition Dry deposition only
Emission load units grams/second
Deposition units microgram/m2
Units conversion factor 1.00E+06
Plume depletion due to dry removal mechanisms included.
Smooth stability class changes? No
Other stability class adjustments ("urban modes") None
Ignore building wake effects? No
Decay coefficient (unless overridden by met. file) 0.000
Anemometer height 10 m
Roughness height at the wind vane site 0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high Briggs Rural
Vertical dispersion curves for sources <100m high Briggs Rural
Horizontal dispersion curves for sources >100m high Pasquill-Gifford
Vertical dispersion curves for sources >100m high Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy? Yes
Enhance vertical plume spreads for buoyancy? Yes
Adjust horizontal P-G formulae for roughness height? Yes
Adjust vertical P-G formulae for roughness height? Yes
Roughness height 0.800m
Adjustment for wind directional shear None

PLUME RISE OPTIONS

Gradual plume rise? Yes
Stack-tip downwash included? Yes
Building downwash algorithm: PRIME method.
Entrainment coeff. for neutral & stable lapse rates 0.60,0.60
Partial penetration of elevated inversions? No
Disregard temp. gradients in the hourly met. file? No

and in the absence of boundary-layer potential temperature gradients
given by the hourly met. file, a value from the following table
(in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

1

Chullora - Haulage roads controlled conditions dust deposition

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: HAT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320767	6248850	29m	5m	200m	0deg	5m	0m

(Constant) emission rate = 1.30E-05 grams/second per square metre

Particle Particle Particle

INTEGRATED AREA SOURCE: FTT

X0(m) Y0(m) Ground El Length X Length Y Or. Angle Ver. spread Height
320767 6248927 29m 10m 15m 15deg 5m 0m

(Constant) emission rate = 6.10E-06 grams/second per square metre

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)
------------------------------	------------------------------	--------------------------------

0.1500	2.5	2.65
0.3400	6.0	2.65
0.5100	10.0	2.65

INTEGRATED AREA SOURCE: TT

X0(m) Y0(m) Ground El Length X Length Y Or. Angle Ver. spread Height
320720 6248875 29m 35m 50m 0deg 5m 0m

(Constant) emission rate = 1.30E-06 grams/second per square metre

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)
------------------------------	------------------------------	--------------------------------

0.1500	2.5	2.65
0.3400	6.0	2.65
0.5100	10.0	2.65

1

Chullora - Haulage roads controlled conditions dust deposition

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5	6	320850	6248820	29.0	1.5

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m2)
AVERAGING TIME = 1 HOUR

At the discrete receptors:

1: 2.53E+02 @Hr01,17/05/07	4: 2.55E+02 @Hr03,21/05/07
2: 1.59E+02 @Hr05,28/02/07	5: 4.07E+01 @Hr03,22/02/07
3: 1.64E+03 @Hr20,20/07/08	6: 1.17E+03 @Hr04,28/03/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m2)
AVERAGING TIME = 24 HOURS

At the discrete receptors:

1: 1.82E+03 @Hr24,12/07/07	4: 1.14E+03 @Hr24,02/07/07
2: 1.20E+03 @Hr24,30/03/08	5: 2.62E+02 @Hr24,28/11/08
3: 6.23E+03 @Hr24,31/07/08	6: 6.83E+03 @Hr24,21/05/07

1 HIGHEST RECORDINGS FOR EACH RECEPTOR (in microgram/m2)
 90-DAY RUNNING AVERAGES

At the discrete receptors:

1: 5.56E+04 @Hr24,31/07/07	4: 2.16E+04 @Hr24,01/08/07
2: 3.76E+04 @Hr24,30/07/07	5: 3.20E+03 @Hr24,01/04/07
3: 1.03E+05 @Hr24,07/08/08	6: 1.87E+05 @Hr24,16/08/07

Appendix E

Worst Case AUSPLUME Modelling Results and Modelling Files Outputs

Table E1: Summary of Modelling Parameters

Source ID / Type	Pollutant	AUSPLUME ID	Type	X Length	Y Length	Angle	X Co-Ord	Y Co-Ord	Elevation	Time of Occurrence	Emission Rate (g/m ² /s or OU/m ² /s)
Soils, handling and stockpiling	TSP	VEXT	Area	10	15	15	320767	6248927	29	7am – 5pm (10 hours)	$4.7 \times 10^{-5} * U^{1.3}$
	PM ₁₀	VEXP	Area	10	15	15	320767	6248927	29	7am – 5pm (10 hours)	$2.2 \times 10^{-5} * U^{1.3}$
	Benzene (max)	VEXBE	Area	10	15	15	320767	6248927	29	7am – 5pm (10 hours)	Particulates $9.4 \times 10^{-10} * U^{1.3}$ Vapours as per Appendix A
	B(a)P (max)	VEXBP	Area	10	15	15	320767	6248927	29	7am – 5pm (10 hours)	Particulates $2.1 \times 10^{-8} * U^{1.3}$
	Odour	VEXOU	Area	10	15	15	320767	6248927	29	Continuous	7.3
Soils, fugitive emissions from stockpiles	TSP	FT	Area	10	15	15	320767	6248927	29	Continuous	2.7×10^{-6}
	PM ₁₀	FP	Area	10	15	15	320767	6248927	29	Continuous	1.4×10^{-6}
	Benzene (max)	FBEP FBEV	Area	10	15	15	320767	6248927	29	Continuous	Particulates 5.4×10^{-11} Vapours as per Appendix A
	B(a)P (max)	FBPP	Area	10	15	15	320767	6248927	29	Continuous	Particulates 1.2×10^{-9}
	Odour	FOU	Area	10	15	15	320767	6248927	29	Continuous	7.3
Haulage roads	TSP	HAT	Area	5	200	0	320767	6248850	29	7am – 5pm (10 hours)	4.1×10^{-5}
	PM ₁₀	HAP	Area	5	200	0	320767	6248850	29	7am – 5pm (10 hours)	2.5×10^{-5}

Source ID / Type	Pollutant	AUSPLUME ID	Type	X Length	Y Length	Angle	X Co-Ord	Y Co-Ord	Elevation	Time of Occurrence	Emission Rate (g/m ² /s or OU/m ² /s)
Stabilisation / immobilisation soils	TSP	TT ¹ VTT	Area	35	50	0	320720	6248875	29	7am – 5pm (10 hours)	5.0*10 ⁻⁴ 2.9*10 ⁻⁴ * U ^{1.3}
	PM ₁₀	TPM ¹ VTPM	Area	10	50	0	320720	6248875	29	7am – 5pm (10 hours)	2.5*10 ⁻⁴ 1.4*10 ⁻⁴ * U ^{1.3}
	Benzene (max)	VTBEP	Area	10	50	0	320720	6248875	29	7am – 5pm (10 hours)	Particulates 5.9*10 ⁻⁹ Vapours as per Appendix A
	B(a)P (max)	VTBP	Area	10	50	0	320720	6248875	29	7am – 5pm (10 hours)	Particulates 1.3*10 ⁻⁷ * U ^{1.3}
	Odour	TOU	Area	10	50	0	320720	6248875	29	7am – 5pm (10 hours)	7.3
Bioremediation of soils ²	TSP	TT	Area	50	100	0	320806	6248828	29	Continuous	2.7*10 ⁻⁶
	PM ₁₀	TPM	Area	50	100	0	320806	6248828	29	Continuous	1.4*10 ⁻⁶
	Benzene (max)	TBEP TBEV	Area	50	100	0	320806	6248828	29	Continuous	Particulates 5.4*10 ⁻¹¹ Vapours as per Appendix A
	B(a)P (max)	TBPP	Area	50	100	0	320806	6248828	29	Continuous	Particulates 1.2*10 ⁻⁹
	Odour	TOU	Area	50	100	0	320806	6248828	29	Continuous	7.3

Note: 1. Emissions consequent of concrete dusts

2. Also accounts for potential emissions from stockpiled soils associated with the stabilisation / immobilisation works

Table E2: Summary of Worse Air Pollutant Levels with Assumption of No Site Controls ($\mu\text{g}/\text{m}^3$ or OU)

Scenario	Pollutant	Averaging Time	Criteria	Receptor ID				
				1	2	3	4	5
Soils handling and fugitive emissions	TSP	Annual	90	2.25E+01	8.44E+00	8.62E+00	6.54E+00	8.22E-01
	PM ₁₀	24 hour	50	4.59E+01	1.71E+01	2.94E+01	2.93E+01	3.51E+00
	PM ₁₀	Annual	30	1.07E+01	4.06E+00	4.07E+00	3.11E+00	3.95E-01
	Benzene	1 hour	29	7.10E-03	4.10E-03	5.95E-03	6.27E-03	9.41E-04
	Benzo(a)pyrene	1 hour	0.4	1.59E-01	9.17E-02	1.33E-01	1.40E-01	2.10E-02
	Odour	1 second	2 OU	3.50E+02	2.72E+02	3.76E+02	4.64E+02	7.08E+01
Haulage roads	TSP	Annual	90	1.15E+01	7.21E+00	2.91E+00	2.78E+00	5.81E-01
	PM ₁₀	24 hour	50	1.77E+01	1.44E+01	2.03E+01	1.20E+01	1.73E+00
	PM ₁₀	Annual	30	7.03E+00	4.40E+00	1.78E+00	1.70E+00	3.54E-01
Soil treatment by immobilisation / stabilisation	TSP	Annual	90	56.61	29.33	15.54	26.11	3.86
	PM ₁₀	24 hour	50	135.3	58.2	69.7	113.2	10.32
	PM ₁₀	Annual	30	28.16	14.58	7.72	13	1.924
	Benzene	1 hour	29	2.32E+01	1.10E+01	1.29E+01	2.60E+01	2.65E+00
	Benzo(a)pyrene	1 hour	0.4	0.0759	0.0318	0.0405	0.0828	0.00835
	Odour	1 second	2 OU	2.87E+01	1.37E+01	1.60E+01	3.21E+01	3.28E+00
Soil treatment by bioremediation	TSP	Annual	90	3.19E+00	2.12E+00	8.88E-01	1.05E+00	2.31E-01
	PM ₁₀	24 hour	50	5.31E+00	3.77E+00	3.59E+00	3.28E+00	6.05E-01
	PM ₁₀	Annual	30	1.65E+00	1.10E+00	4.60E-01	5.44E-01	1.10E-01
	Benzene	1 hour	29	1.29E-03	1.00E-03	1.39E-03	1.72E-03	2.62E-04
	Benzo(a)pyrene	1 hour	0.4	6.95E-02	5.40E-02	7.47E-02	9.23E-02	1.40E-02
	Odour	1 second	2 OU	1.75E+02	1.36E+02	1.88E+02	2.32E+02	3.54E+01

BOLD denotes exceedance of criterion

Summarised Modelling Outputs

Soil Handling, Stockpiling and Fugitive Emissions – Worse Case – Fixed Emissions

Chullora - Soil handling fugitive worst case

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m ³
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Soil handling fugitive worst case

SOURCE GROUPS

Group No. Members

1	FT
2	FP
3	FBEP
4	FBPP

1

Chullora - Soil handling fugitive worst case

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: FT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 2.70E-06 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 1.40E-06 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FBEP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 5.40E-06 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FBPP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 1.20E-06 grams/second per square metre
No gravitational settling or scavenging.

1

Chullora - Soil handling fugitive worst case

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):
320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5					

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

Soil Handling, Stockpiling and Fugitive Emissions – Worse Case – Variable Emissions

Chullora - Soil handling worst case

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Soil handling worst case

SOURCE GROUPS

Group No. Members

1 VEXT
 2 VEXP
 3 VEXBE
 4 VEXBP

1

Chullora - Soil handling worst case

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: VEXT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 4.70E-05 grams/second per square metre

Hourly multiplicative factors will be used with
 this emission factor.
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VEXP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 2.20E-05 grams/second per square metre

Hourly multiplicative factors will be used with
 this emission factor.
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VEXBE

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 9.40E-06 grams/second per square metre

Hourly multiplicative factors will be used with
 this emission factor.
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VEXBP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 2.10E-06 grams/second per square metre

Hourly multiplicative factors will be used with
 this emission factor.
 No gravitational settling or scavenging.

1

Chullora - Soil handling worst case

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5					

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

HOURLY VARIABLE EMISSION FACTOR INFORMATION

The input emission rates specified above will be multiplied by hourly varying factors entered via the input file:

C:\Users\sdorairaj\Ausplume\Chulvar.csv

For each stack source, hourly values within this file will be added to each declared exit velocity (m/sec) and temperature (K).

Title of input hourly emission factor file is:

Variable Emissions,,

HOURLY EMISSION FACTOR SOURCE TYPE ALLOCATION

Prefix V allocated: VEXT VEXP VEXBE VEXBP

Haulage Roads – Worse Case

1

Chullora - Haulage roads worst case

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Haulage roads worst case

SOURCE GROUPS

Group No. Members

1 HAT
2 HAP

1

Chullora - Haulage roads worst case

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: HAT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320857	6248806	29m	5m	200m	0deg	5m	0m

(Constant) emission rate = 4.10E-05 grams/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: HAP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320857	6248806	29m	5m	200m	0deg	5m	0m

(Constant) emission rate = 2.50E-05 grams/second per square metre
No gravitational settling or scavenging.

1

Chullora - Haulage roads worst case

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5					

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

Soil Treatment – Stabilisation / Immobilisation – Worse Case – Fixed Emissions

Chullora - Cement Stabilisation worst case

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Cement Stabilisation worst case

SOURCE GROUPS

Group No. Members

1 TT
 2 TPM
 3 VTBEF

1

Chullora - Cement Stabilisation worst case

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: TT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 5.00E-04 grams/second per square metre
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TPM

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 2.50E-04 grams/second per square metre
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VTBEF

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 5.90E-06 grams/second per square metre
 No gravitational settling or scavenging.

1

Chullora - Cement Stabilisation worst case

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
 320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):

6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
 6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5					

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

Soil Treatment – Stabilisation / Immobilisation – Worse Case – Variable Emissions

1

Chullora - Cement Stabilisation worst case

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Cement Stabilisation worst case

SOURCE GROUPS

Group No. Members

1 VTT
 2 VTPM
 3 VTBP

1

Chullora - Cement Stabilisation worst case

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: VTT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 2.90E-04 grams/second per square metre

Hourly multiplicative factors will be used with
 this emission factor.
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VTPM

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 1.40E-04 grams/second per square metre

Hourly multiplicative factors will be used with
 this emission factor.
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: VTBP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 1.30E-06 grams/second per square metre

Hourly multiplicative factors will be used with
 this emission factor.
 No gravitational settling or scavenging.

1

Chullora - Cement Stabilisation worst case

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):
 320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
 320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):
 6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
 6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5					

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

HOURLY VARIABLE EMISSION FACTOR INFORMATION

The input emission rates specified above will be multiplied by hourly varying factors entered via the input file:

C:\Users\sдорairaj\Ausplume\Chulvar.csv

For each stack source, hourly values within this file will be added to each declared exit velocity (m/sec) and temperature (K).

Title of input hourly emission factor file is:

Variable Emissions,,

HOURLY EMISSION FACTOR SOURCE TYPE ALLOCATION

Prefix V allocated: VTT VTPM VTBP

Soil Treatment – Bioremediation – Worse Case – Fixed Emissions

Chullora - bioremediation worst case

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - bioremediation worst case

SOURCE GROUPS

Group No. Members

1 TT
 2 TPM
 3 TBEP
 4 TBPP

1

Chullora - bioremediation worst case

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: TT

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 2.70E-06 grams/second per square metre
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TPM

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 1.40E-06 grams/second per square metre
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TBEP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 5.40E-06 grams/second per square metre
 No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TBPP

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 2.90E-06 grams/second per square metre
 No gravitational settling or scavenging.

1

Chullora - bioremediation worst case

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):
 320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
 320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):
 6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
 6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5					

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

Odour Sources - Worse Case

Chullora - Odour Sources Worst case

Concentration or deposition	Concentration
Emission rate units	OUV/second
Concentration units	Odour_Units
Units conversion factor	1.00E+00
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours

Chullora - Odour Sources Worst case

SOURCE GROUPS

Group No. Members

-
- | | |
|---|-------|
| 1 | VEXOU |
| 2 | FOU |
| 3 | TOUCS |
| 4 | TOUBR |
-

1

Chullora - Odour Sources Worst case

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: VEXOU

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FOU

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TOUCS

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	20m	20m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TOUBR

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	50m	100m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

1

Chullora - Odour Sources Worst case

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):
320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):
6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5					

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

Odour Sources – With Controls

1

Chullora - Odour Sources with controls

Concentration or deposition	Concentration
Emission rate units	OUV/second
Concentration units	Odour_Units
Units conversion factor	1.00E+00
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours

Chullora - Odour Sources with controls

SOURCE GROUPS

Group No. Members

-
- | | |
|---|-------|
| 1 | VEXOU |
| 2 | FOU |
| 3 | TOUCS |
| 4 | TOUBR |
-

1

Chullora - Odour Sources with controls

SOURCE CHARACTERISTICS

INTEGRATED AREA SOURCE: VEXOU

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	3m	50m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: FOU

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	3m	50m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TOUCS

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	3m	50m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

INTEGRATED AREA SOURCE: TOUBR

X0(m)	Y0(m)	Ground El	Length X	Length Y	Or. Angle	Ver. spread	Height
320806	6248828	29m	3m	50m	0deg	5m	0m

(Constant) emission rate = 7.30E+00 OUV/second per square metre
No gravitational settling or scavenging.

1

Chullora - Odour Sources with controls

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):
320665.m 320711.m 320755.m 320800.m 320844.m 320888.m 320931.m
320975.m 321018.m 321062.m 321107.m

and these y-values (or northings):
6248613.m 6248668.m 6248726.m 6248784.m 6248844.m 6248902.m 6248962.m
6249020.m 6249079.m 6249135.m 6249195.m

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEV	HEIGHT	No.	X	Y	ELEV	HEIGHT
1	321026	6248922	35.0	1.5	4	320949	6248674	35.0	1.5
2	321084	6249063	30.0	1.5	5	320208	6248352	30.0	1.5
3	320795	6249157	26.0	1.5					

METEOROLOGICAL DATA : DECCW Chullora AWS Data BoM SydneyAP Clouds SydneyAP

Cement Stabilisation – Fugitive Emissions with Controls

Chullora - Cement Stabilisation with control

Concentration or deposition	Concentration
Emission rate units	grams/second
Concentration units	microgram/m3
Units conversion factor	1.00E+06
Constant background concentration	0.00E+00
Terrain effects	Egan method
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	No
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Briggs Rural
Vertical dispersion curves for sources <100m high	Briggs Rural
Horizontal dispersion curves for sources >100m high	Pasquill-Gifford
Vertical dispersion curves for sources >100m high	Pasquill-Gifford
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class					
	A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES

Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Urban" values (unless overridden by met. file)

AVERAGING TIMES

1 hour
24 hours
90 days

Chullora - Cement Stabilisation with control

SOURCE GROUPS