DATE OF REPORT: 7TH NOVEMBER, 2016

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This Report Contains Commercially Sensitive Information

TEST REPORT NO. JUN16100.2

AIR EMISSIONS MONITORING OF RELEASE POINTS 4A & 4B AT ADELAIDE BRIGHTON CEMENT LTD IN BIRKENHEAD

DATE OF TESTING: 14 – 15TH JUNE, 2016

ACCREDITATION:

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INTRODUCTION

Airlabs Environmental Pty Ltd was commissioned by Adelaide Brighton Cement Ltd to conduct air emissions testing of the Dry Process Kiln 4 Main Stack (Release Point 4A) and the Precalciner Plant Stack (Release Point 4B) at their Birkenhead Plant. The following parameters were monitored on each stack:

- Temperature, Gas Velocity and Volume Flow Rate
- Moisture Concentration
- Concentration of Oxygen and Carbon Dioxide
- Dry Molecular Weight and Dry Gas Density
- Concentration and Mass Emission Rate of:
  - Total Solid Particulates
  - PM_{10} (Particulate matter with a nominal aerodynamic diameter $\leq 10\,\mu m$)
  - $PM_{2.5}$ (Particulate matter with a nominal aerodynamic diameter $\leq 2.5\,\mu m$)
  - Sulphur Dioxide
  - Carbon Monoxide
  - Nitrogen Oxides (as NO_2)
  - Hydrogen Chloride[a]
  - Chlorine
  - Fluoride[b]
  - Total Volatile Organic Compounds (VOCs)
  - Benzene
  - Multi-Metals[c]
  - Chromium VI and compounds
  - Polycyclic Aromatic Hydrocarbons (PAHs as BaP).

Combustion gases (O_2, CO, CO_2, SO_2 and NO_x) were monitored semi-continuously and the average values reported. Average normalised flow rates were used to calculate the mass emission rates. The Dry Process Kiln 4 Main Stack (4A) and the Precalciner Plant Stack (4B) were both tested on 14 – 15th June 2016.

QUALITY STATEMENT

Airlabs Environmental is committed to providing the highest quality data to all our clients, as reflected in our ISO 17025 (NATA) accreditation. This requires strict adherence to and continuous improvement of all our processes and test work. Our goal is to exceed the QA/QC requirements as set by our clients and appropriate governmental entities and to insure that all data generated is scientifically valid and defensible.

Airlabs Environmental is NATA accredited for all sampling undertaken for this project. Analysis was undertaken by the National Measurement Institute (NATA Accreditation No. 198) and Airlabs Environmental in accordance with our terms of accreditation.

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[a] Chlorides expressed as HCl.

[b] Fluorides expressed as HF.

[c] Antimony and compounds, Arsenic and compounds, Barium (soluble compounds), Beryllium and compounds, Cadmium and compounds Chromium (III) and compounds, Copper oxide fume (as CuO), Iron oxide fume (as Fe_2O_3), Lead and compounds, Magnesium oxide fume (as MgO), Manganese and compounds, Mercury - organic, Mercury - inorganic, Nickel and compounds, Zinc oxide fume (as ZnO).

TEST METHODS

All sampling was undertaken by Airlabs Environmental. Airlabs Environmental is NATA accredited for all sampling undertaken for this project (NATA Accredited Laboratory No. 15463). Analysis was undertaken by Airlabs Environmental and the National Measurement Institute (NMI, NATA Accreditation No. 198) in accordance with our terms of accreditation. Specific details of the test methods used are available upon request.

Table 1: Summary of Test Methods

Test Parameter	Test Method	Method Detection Limit	Estimated Measurement Uncertainty	NATA Accredited	
				Sampling	Analysis
Sample plane criteria	AS 4323.1	NA	NA	✓	NA
Gas velocity	US EPA Method 2	3 m/s	± 10%	✓	NA
Temperature	US EPA Method 2	273K (0°C)	± 1%	✓	NA
Moisture content	US EPA Method 4	0.2%	± 5%	✓	✓
Oxygen & carbon dioxide	US EPA Method 3A	0.1%	± 2%	✓	✓
Dry molecular weight & gas density	US EPA Method 3	NA	± 5%	✓	✓
Total solid particulates	AS 4323.2	1 mg/m^3	± 15%	✓	✓
PM_{10} & $PM_{2.5}$	US EPA Method 201A	1 mg/m^3	± 15%	✓	✓
Sulfur dioxide	US EPA Method 6C	3 mg/m^3	± 5%	✓	✓
Carbon monoxide	US EPA Method 10	1 mg/m^3	± 5%	✓	✓
Nitrogen oxides (as NO_2)	US EPA Method 7E	2 mg/m^3	± 5%	✓	✓
Chlorine, Chloride (as HCl) & Fluoride (as HF)	US EPA Method 26A	0.1 mg/m^3	± 17%	✓	✓ [1]
Total VOCs	US EPA Method 25A	0.1 mg/m^3	± 10%	✓	✓
Benzene	US EPA Method 18 / NSW EPA TM-34	0.05 mg/m^3	± 17%	✓	✓
Multi-Metals	US EPA Method 29	0.05 mg/m^3	± 17%	✓	✓ [2]
Chromium VI	US EPA Method 0061	0.0001 mg/m^3	± 17%	✓	✓ [3]
PAHs (as BαP)	US EPA SW-846 Method 0010 & CARB 429	0.00001 mg/m^3	± 20%	✓	✓ [4]

1. Chloride and fluoride analyses were performed by NMI, with results included in their Report No. RN1122062.
2. Heavy metal analysis was performed on the various sample components by NMI, with results included in their Report No. RN1122062.
3. Hexavalent chromium analysis was performed by NMI, with results included in their Report No. RN1122062.
4. PAH analysis was performed by NMI, with results included in their Analytical Certificate No. ORG16_043.

DEFINITIONS

'SA EPA'	South Australian Environment Protection Authority.
'US EPA'	United States Environmental Protection Agency.
'NSW EPA'	New South Wales Environment Protection Authority.
'NMI'	National Measurement Institute (Australian Government), North Ryde, NSW.
'tph'	Tonnes per hour.
'K'	Absolute temperature in Kelvin (°C + 273).
'mB'	Pressure in millibars.
'lpm'	Gas flow rate in litres per minute.
'STP'	Standard temperature and pressure (273K and 101.3 kPa).
'm^3'	Actual gas volume in cubic metres at stack conditions.
'Nm^3'	Gas volume in dry cubic metres at STP.
'<'	Less than. The value stated is the limit of detection.
'g'	Grams.
'mg'	Milligrams (10^{-3} grams).
'µg'	Micrograms (10^{-6} grams).
'min'	Minute.
'LOD'	Limit of detection.
'FIA'	Flame ionisation analyser.
'VOC'	Volatile organic compound. A VOC is defined as any chemical compound based on carbon chains or rings with a vapour pressure greater than 2 mm of mercury (0.27 kPa) at 25°C. These compounds may contain hydrogen, oxygen, nitrogen and other elements, but specifically excluded are methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonate salts.
'PAHs'	Polycyclic aromatic hydrocarbons.
'CARB'	California Air Resources Board.
'OEHHA'	Office of Environmental Health Hazard Assessment (US).
'BaP-PEF'	Benzo(a)pyrene Potency Equivalency Factor.
'$BAP\text{-}TEQ_{PAH}$'	Benzo(a)pyrene Toxic Equivalents.
'N/A'	Not applicable.
'PM_{10}'	Particulate matter with a nominal aerodynamic diameter ≤10µm.
'$PM_{2.5}$'	Particulate matter with a nominal aerodynamic diameter ≤2.5µm.

SUITABILITY OF SAMPLING PLANE

The criteria for sampling planes as specified in AS4323.1-1995 'Stationary Source Emissions, Method 1: Selection of Sampling Provisions' states that, in the absence of cyclonic flow activity, ideal sampling plane conditions are found to exist at the positions given in Table 2 below:

Table 2: Criteria for the Selection of Sampling Planes

Type of flow disturbance	Minimum distance upstream from disturbance, diameters (*D*)	Minimum distance downstream from disturbance, diameters (*D*)
Bend, connection, junction, direction change	>2D	>6D
Louvre, butterfly damper (partially closed or closed)	>3D	>6D
Axial fan	>3D	>8D (see Note)
Centrifugal fan	>3D	>6D

NOTE: The plane should be selected as far as practicable from a fan. Flow straighteners may be required to ensure the position chosen meets the check criteria listed in Items (a) to (f) below.

Section 4.1 of AS 4323.1-1995 (Ideal Sampling Positions) states that the location of the sampling plane shall be such that it meets the following criteria:

(a) The gas flow is basically in the same direction at all points along each sampling traverse.

(b) The gas velocity at all sampling points is greater than 3 m/s.

(c) The gas flow profile at the sampling plane shall be steady, evenly distributed and not have a cyclonic component which exceeds an angle of 15° to the duct axis, when measured near the periphery of a circular sampling plane.

(d) The temperature difference between adjacent points of the survey along each sampling traverse is less than 10% of the absolute temperature, and the temperature at any point differs by less than 10% from the mean.

(e) The ratio of the highest to lowest pitot pressure difference shall not exceed 9:1 and the ratio of highest to lowest gas velocities shall not exceed 3:1. For isokinetic testing with the use of impingers, the gas velocity ratio across the sampling plane should not exceed 1.6:1.

(f) The gas temperature at the sampling plane should preferably be above the dewpoint.

The gas characteristics determined for the Dry Process Kiln 4 Main Stack (Release Point 4A) and the Precalciner Plant Stack (Release Point 4B) satisfied the requirements of AS 4323.1-1995 Section 4.1 (a) - (f), and as such the sampling location is considered to be ideal. The sampling plane details and required number of sampling points are given in Tables 3 and 4 below:

SUITABILITY OF SAMPLING PLANE Continued

Table 3: Sampling Plane Details for the Kiln 4 Main Stack

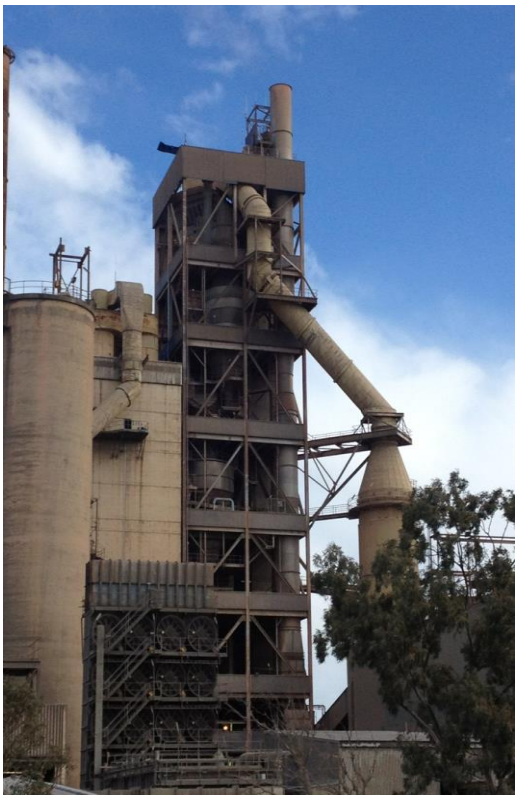
Parameter	
Stack Shape	Circular
Actual Stack Internal Diameter (m)	3.23
Stack Exit Diameter (m)	3.23
Direction of Discharge to Air	Vertical
Type of Disturbance, Upstream	Centrifugal Fan
Distance from Upstream Disturbance	> 6 D
Type of Disturbance, Downstream	Stack Exit
Distance to Downstream Disturbance	> 2 D
Compliance with AS4323.1, Ideal Conditions	Yes
Stack Height Above Ground Level (m)	75.5
Standard No. of Sampling Points per Traverse	12
Number of Traverses	2
Correction Factor	N/A
Corrected No. of Sampling Points per Traverse	N/A
Total No. of Sampling Points	24
Stratified	No
Cyclonic	No (< 15°)
Velocity Difference	1.5:1 (< 1.6:1)
Absolute Temperature Difference (K)	< 10%
Minimum Velocity at any Sample Point (m/s)	> 3

Figure 1: Kiln 4 Main Stack (RP 4A)

Table 4: Sampling Plane Details for the Precalciner Plant Stack

Parameter	
Stack Shape	Circular
Actual Stack Internal Diameter (m)	3.00
Stack Exit Diameter (m)	3.00
Direction of Discharge to Air	Vertical
Type of Disturbance, Upstream	Centrifugal Fan
Distance from Upstream Disturbance	> 6 D
Type of Disturbance, Downstream	Stack Exit
Distance to Downstream Disturbance	> 2 D
Compliance with AS4323.1, Ideal Conditions	Yes
Stack Height Above Ground Level (m)	96
Standard No. of Sampling Points per Traverse	12
Number of Traverses	2
Correction Factor	N/A
Corrected No. of Sampling Points per Traverse	N/A
Total No. of Sampling Points	24
Stratified	No
Cyclonic	No (< 15°)
Velocity Difference	1.5:1 (< 1.6:1)
Absolute Temperature Difference (K)	< 10%
Minimum Velocity at any Sample Point (m/s)	> 3

Figure 2: Precalciner Plant Stack (RP 4B)



RESULTS – RELEASE POINT 4A

Company	Adelaide Brighton Cement
Site	Elder Rd, Birkenhead
Source Tested	Dry Process Kiln 4 Main Stack - Release Point 4A
Date of Tests	14 – 15th June 2016
Sampling Period	14:43 – 21:41 (14/6/16) 10:04 – 14:28 (15/6/16)
Testing Officers	C. Clunies-Ross & I. Brash
Sampling Position	Four 4" BSP sample ports in circular stack

Table 5: Release Point 4A - Sampling Conditions

Sampling Conditions	*Start*	*Finish*	*Average*
Stack diameter at sampling plane (m)	3.23	3.23	3.23
Average stack gas temperature (K)	383 (110°C)	381 (108°C)	382 (109°C)
Average barometric pressure (mB)	1017	1014	1016
Average static pressure (mB)	- 1.6 (negative pressure)	- 1.9 (negative pressure)	- 1.8 (negative pressure)
Average stack pressure (mB)	1015	1012	1014
Average velocity at sampling plane (m/s)	19.7	20.3	20.0
Average velocity at sampling plane expressed at STP (m/s)	14.0	14.5	14.3
Actual gas flow rate (m^3/min)	9,690	9,980	9,830
Average moisture content (%v/v)	8.93	8.81	8.87
Gas flow rate at STP, dry (Nm^3/min)	6,290	6,520	6,400
Average carbon dioxide concentration, dry basis (%v/v)	6.54	6.27	6.41
Average oxygen concentration, dry basis (%v/v)	16.3	16.5	16.4
Dry molecular weight of stack gas (g/g mole)	29.70	29.66	29.68
Dry gas density of stack gas (kg/m^3)	1.326	1.324	1.325

RESULTS – RELEASE POINT 4A Continued

Table 6: Release Point 4A – Summary of Test Results

Parameter	Sampling Period	Concentration (mg/Nm³)	Emission Rate (g/min)
Total Solid Particulates	14:43 – 16:47[d] (Sampled by IB & CCR on 14/6/16)	21.0	134
PM_{10} Particles		14.5	93
$PM_{2.5}$ Particles		4.4	28
Sulphur Dioxide	17:20 – 18:20 (Sampled by CCR on 14/6/16)	< 3 – 29 (Av. 11)	< 20 – 180 (Av. 70)
Carbon Monoxide		74 – 260 (Av. 120)	470 – 1,660 (Av. 770)
Oxides of Nitrogen (as NO_2) *Actual at STP* *At 7% O_2*		447 – 830 (Av. 621) 1,380 – 2,560 (Av. 1,920)	2,860 – 5,310 (Av. 3,980)
Hydrogen Chloride	12:34 – 14:38 (Sampled by CCR on 15/6/16)	3.6	23
Chlorine		1.2	7.7
Fluoride (as HF)		< 0.1	< 0.6
Total Volatile Organic Compounds (by FIA, as n-propane equivalent)	17:43 – 18:43 (Sampled by CCR on 14/6/16)	0.55	3.5
Benzene (by activated carbon adsorption and GC/MS analysis)		0.071	0.45
Total Multi-Metals[e]	19:36 – 21:41 (Sampled by CCR on 14/6/16)	2.3	15
Chromium VI and Compounds	17:08 – 19:14 (Sampled by IB on 14/6/16)	0.00047	0.0030
Polycyclic Aromatic Hydrocarbons *Total BaP-TEQ$_{PAH}$*[f]	10:04 – 12:10 (Sampled by CCR on 15/6/16)	0.0000062	0.000040

[d] Testing for Total Solid Particles and PM_{10}/$PM_{2.5}$ Particles was conducted simultaneously through different ports.
[e] Individual metals and their compounds are given in Table 7.
[f] Individual BaP-TEQ$_{PAH}$ contributions are given in Table 8, and the total BaP-TEQ$_{PAH}$ in Table 10. This result includes half LOD values.

RESULTS – RELEASE POINT 4A Continued

Table 7: Release Point 4A – Metals and their Compounds

Metal	**Concentration (mg/Nm³)**	**Emission Rate (g/min)**
Antimony and its compounds	0.00013	0.00083
Arsenic and its compounds	0.00017	0.0011
Barium (soluble compounds)	0.0035	0.022
Beryllium and its compounds	< 0.0001	< 0.00064
Cadmium and its compounds	0.000014	0.000090
Chromium (III) and its compounds	0.00056	0.0036
Copper oxide fume (as CuO)	0.0025	0.016
Iron oxide fume (as Fe_2O_3)	0.27	1.7
Lead and its compounds	0.00060	0.0038
Magnesium oxide fume (as MgO)	2.0	13
Manganese and its compounds	0.010	0.064
Mercury and its compounds (as Hg) *Organic:* *Inorganic:* *Total:*	 < 0.000006 < 0.00001 < 0.00002	 < 0.00004 < 0.00006 < 0.0001
Nickel and its compounds	0.00032	0.0020
Zinc oxide fume (as ZnO)	0.0091	0.058
TOTAL METALS *Excluding LOD values* *Including half LOD values*	 **2.3** **2.3**	 **15** **15**

RESULTS – RELEASE POINT 4A Continued

Table 8: Release Point 4A – Individual USEPA Priority Pollutant PAHs

Individual USEPA Priority Pollutant PAHs	Concentration of PAHs (µg/Nm³)	BaP-PEF value	BaP-TEQ$_{PAH}$ Contribution	Emission Rate of PAHs (mg/min)
Naphthalene	9.1	0.0	0.0	59
2-Methylnaphthalene	1.0	0.0	0.0	6.5
Acenaphthylene	0.054	0.0	0.0	0.35
Acenaphthene	< 0.0068	0.0	0.0	< 0.043
Fluorene	< 0.0068	0.0	0.0	< 0.043
Phenanthrene	0.23	0.0	0.0	1.5
Anthracene	< 0.0068	0.0	0.0	< 0.043
Fluoranthene	0.017	0.0	0.0	0.11
Pyrene	< 0.0068	0.0	0.0	< 0.043
Benz(a)anthracene	< 0.0068	0.1	0.00034	< 0.043
Chrysene	< 0.0068	0.01	0.000034	< 0.043
Benzo(b)fluoranthene	< 0.0068	0.1	0.00034	< 0.043
Benzo(k)fluoranthene	< 0.0068	0.1	0.00034	< 0.043
Benzo(e)pyrene	< 0.0068	0.0	0.0	< 0.043
Benzo(a)pyrene	< 0.0068	1.0	0.0034	< 0.043
Perylene	< 0.0068	0.0	0.0	< 0.043
Indeno(123-cd)pyrene	< 0.0068	0.1	0.00034	< 0.043
Dibenz(ah)anthracene	< 0.0068	0.4	0.0014	< 0.043
Benzo(ghi)perylene	< 0.0068	0.0	0.0	< 0.043

Table 9: Release Point 4A – Total USEPA Priority Pollutant PAHs

Total USEPA Priority Pollutant PAHs	Concentration (µg/Nm³)	Emission Rate (mg/min)
Excluding LOD values	10	67
Including half LOD values	10	67

Table 10: Release Point 4A – Total PAH Toxic Equivalents (BaP-TEQ$_{PAH}$)

Total PAH Toxic Equivalents (BaP-TEQ$_{PAH}$)[g]	Concentration (µg/Nm³)	Emission Rate (mg/min)
Excluding LOD values	0.0	0.0
Including half LOD values	0.0062	0.040

[g] Calculated using benzo(α)pyrene potency equivalency factors (BaP-PEF values).

RESULTS – RELEASE POINT 4B

Company	Adelaide Brighton Cement
Site	Elder Rd, Birkenhead
Source Tested	Precalciner Plant Stack - Release Point 4B
Date of Tests	14 – 15th June 2016
Sampling Period	10:42 – 12:56 (14/6/16) 09:41 – 18:47 (15/6/16)
Testing Officers	C. Clunies-Ross & I. Brash
Sampling Position	Four 4" BSP sample ports in circular stack

Table 11: Release Point 4B - Sampling Conditions

Sampling Conditions	*Start*	*Finish*	*Average*
Stack diameter at sampling plane (m)	3.00	3.00	3.00
Average stack gas temperature (K)	381 (108°C)	381 (108°C)	381 (108°C)
Average barometric pressure (mB)	1018	1014	1016
Static pressure (mB)	-1.6 (negative pressure)	-1.8 (negative pressure)	-1.7 (negative pressure)
Average stack pressure (mB)	1016	1012	1014
Average velocity at sampling plane (m/s)	18.8	19.3	19.1
Average velocity at sampling plane expressed at STP (m/s)	13.5	13.8	13.7
Actual gas flow rate (m^3/min)	7,970	8,190	8,080
Average moisture content (%v/v)	24.2	23.3	23.8
Gas flow rate at STP, dry (Nm^3/min)	4,330	4,500	4,420
Average carbon dioxide concentration, dry basis (%v/v)	19.4	18.9	19.2
Average oxygen concentration (%v/v), dry basis	10.9	11.4	11.2
Dry molecular weight of stack gas (g/g mole)	31.54	31.48	31.51
Dry gas density of stack gas (kg/m^3)	1.408	1.405	1.406

RESULTS – RELEASE POINT 4B Continued

Table 12: Release Point 4B – Summary of Test Results

Parameter	Sampling Period	Concentration (mg/Nm³)	Emission Rate (g/min)
Total Solid Particulates	16:43 – 18:47[h] (Sampled by IB & CCR on 14/6/16)	30.4	134
PM_{10} Particles		18.5	82
$PM_{2.5}$ Particles		9.1	40
Sulphur Dioxide	11:35 – 12:35 (Sampled by CCR on 14/6/16)	< 3	< 10
Carbon Monoxide		263 – 459 (Av. 360)	1,160 – 2,030 (Av. 1,590)
Oxides of Nitrogen (as NO_2) *Actual at STP* *At 7% O_2*		627 - 802 (Av. 691) 894 – 1,140 (Av. 985)	2,770 – 3,540 (Av. 3,050)
Hydrogen Chloride	14:29 – 16:32 (Sampled by IB on 15/6/16)	4.5	20
Chlorine		2.3	10
Fluoride (as HF)		< 0.1	< 0.4
Total Volatile Organic Compounds (by FIA, as n-propane equivalent)	11:56 – 12:56 (Sampled by CCR on 14/6/16)	1.3	5.7
Benzene (by activated carbon adsorption and GC/MS analysis)		0.21	0.93
Total Multi-Metals [i]	09:41 – 11:45 (Sampled by IB on 15/6/16)	3.0	13
Chromium VI and Compounds	12:07 – 14:11 (Sampled by IB on 15/6/16)	0.00024	0.0011
Polycyclic Aromatic Hydrocarbons *Total BaP-TEQ$_{PAH}$* [j]	10:42 – 12:48 (Sampled by IB on 14/6/16)	0.0000060	0.000026

[h] Testing for Total Solid Particles and $PM_{10}/PM_{2.5}$ Particles was conducted simultaneously through different ports.
[i] Individual metals and their compounds are given in Table 13.
[j] Individual BaP-TEQ$_{PAH}$ contributions are given in Table 14, and the total BaP-TEQ$_{PAH}$ in Table 16. This result includes half LOD values.

RESULTS – RELEASE POINT 4B Continued

Table 13: Release Point 4B – Metals and their Compounds

Metal	**Concentration (mg/Nm³)**	**Emission Rate (g/min)**
Antimony and its compounds	0.00012	0.00053
Arsenic and its compounds	0.00022	0.00097
Barium (soluble compounds)	0.0049	0.022
Beryllium and its compounds	< 0.0001	< 0.00044
Cadmium and its compounds	0.000031	0.00014
Chromium (III) and its compounds	0.00068	0.0030
Copper oxide fume (as CuO)	0.0022	0.0097
Iron oxide fume (as Fe_2O_3)	0.27	1.2
Lead and its compounds	0.00055	0.0024
Magnesium oxide fume (as MgO)	2.7	12
Manganese and its compounds	0.014	0.062
Mercury and its compounds (as Hg) *Organic:* *Inorganic:* *Total*[k]*:*	 < 0.000006 0.000012 0.000012	 < 0.00003 0.000053 0.000053
Nickel and its compounds	0.00050	0.0022
Zinc oxide fume (as ZnO)	0.0072	0.032
TOTAL METALS *Excluding LOD values* *Including half LOD values*	 **3.0** **3.0**	 **13** **13**

[k] Total does not include 'less than limit of detection' value for organic mercury.

RESULTS – RELEASE POINT 4B Continued

Table 14: Release Point 4B – Individual USEPA Priority Pollutant PAHs

Individual USEPA Priority Pollutant PAHs	Concentration of PAHs (µg/Nm³)	BaP-PEF value	BaP-TEQ Contribution	Emission Rate of PAHs (mg/min)
Naphthalene	16	0.0	0.0	71
2-Methylnaphthalene	1.1	0.0	0.0	5.0
Acenaphthylene	0.033	0.0	0.0	0.15
Acenaphthene	< 0.0066	0.0	0.0	< 0.029
Fluorene	< 0.0066	0.0	0.0	< 0.029
Phenanthrene	0.14	0.0	0.0	0.61
Anthracene	< 0.0066	0.0	0.0	< 0.029
Fluoranthene	0.013	0.0	0.0	0.058
Pyrene	< 0.0066	0.0	0.0	< 0.029
Benz(a)anthracene	< 0.0066	0.1	0.00033	< 0.029
Chrysene	< 0.0066	0.01	0.000033	< 0.029
Benzo(b)fluoranthene	< 0.0066	0.1	0.00033	< 0.029
Benzo(k)fluoranthene	< 0.0066	0.1	0.00033	< 0.029
Benzo(e)pyrene	< 0.0066	0.0	0.0	< 0.029
Benzo(a)pyrene	< 0.0066	1.0	0.0033	< 0.029
Perylene	< 0.0066	0.0	0.0	< 0.029
Indeno(123-cd)pyrene	< 0.0066	0.1	0.00033	< 0.029
Dibenz(ah)anthracene	< 0.0066	0.4	0.0013	< 0.029
Benzo(ghi)perylene	< 0.0066	0.0	0.0	< 0.029

Table 15: Release Point 4B – Total USEPA Priority Pollutant PAHs

Total USEPA Priority Pollutant PAHs	Concentration (µg/Nm³)	Emission Rate (mg/min)
Excluding LOD values	17	77
Including half LOD values	17	77

Table 16: Release Point 4B – Total PAH Toxic Equivalents ($BaP\text{-}TEQ_{PAH}$)

Total PAH Toxic Equivalents ($BaP\text{-}TEQ_{PAH}$)[1]	Concentration (µg/Nm³)	Emission Rate (mg/min)
Excluding LOD values	0.0	0.0
Including half LOD values	0.0060	0.026

[1] Calculated using benzo(α)pyrene potency equivalency factors (BaP-PEF values).