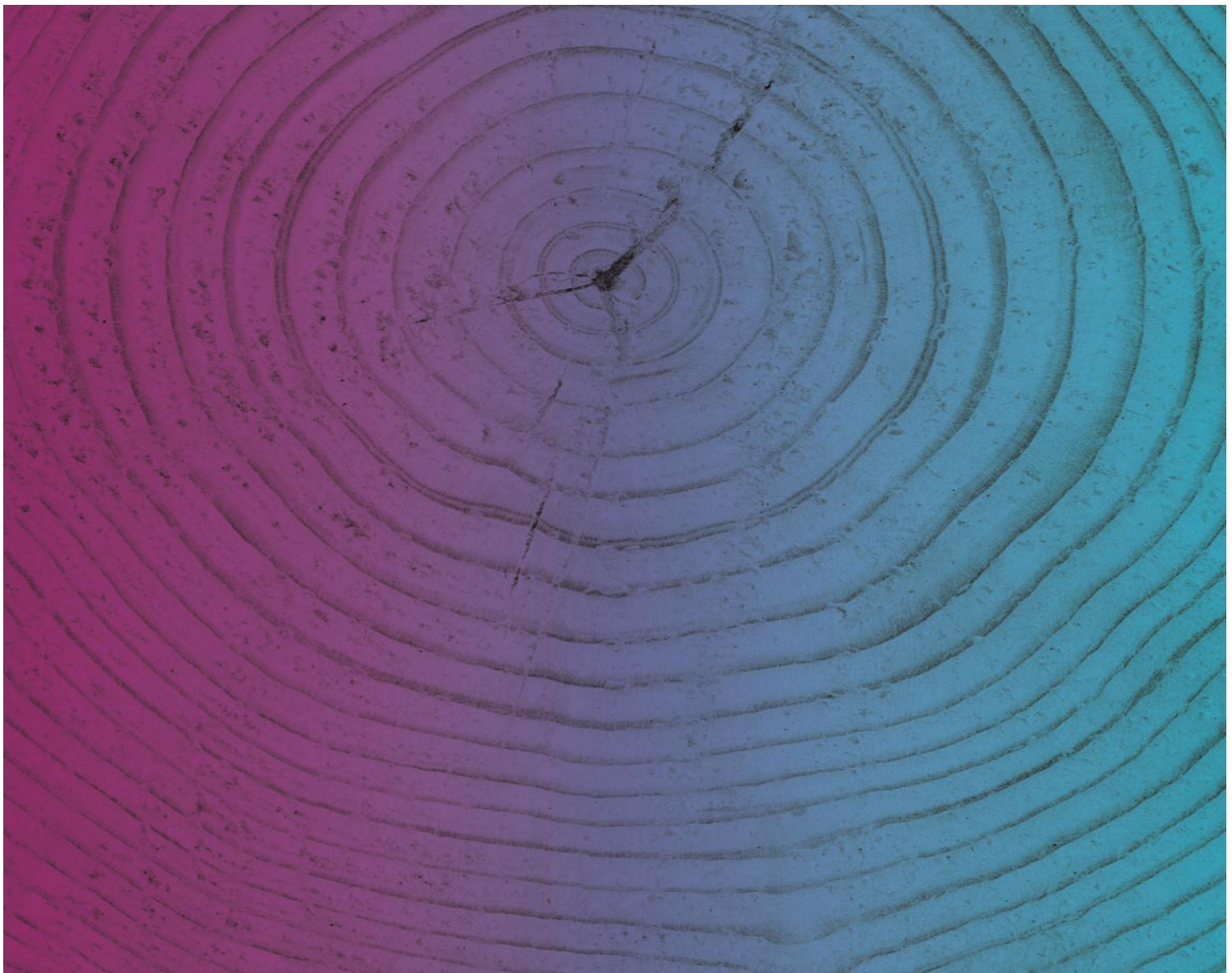


Emissions Testing Report 2012-13

National Ceramic Industries Australia



NATA ACCREDITATION No. 2778 (14391)

Accredited for compliance with ISO/IEC 17025

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Emissions Testing Report 2012-13

National Ceramic Industries Australia

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1.0 Introduction

AECOM was appointed by National Ceramic Industries Australia Pty Limited (NCIA) to conduct annual air emission measurements at their facility located at Racecourse Road, Rutherford NSW. Emission testing was performed for the assessment of compliance with requirements of the facility's Environment Protection Licence (EPL 11956). Emission sources assessed during the testing period were EPL points 1 (Clay Prep), 2 (Pressing and Drying), 5 (Dryer 1), 6 (Dryer 2), 9 (Glaze Line), 10 (Selection Line), 12 (Spray Dryer), 14 (Kiln 1), 15 (Kiln 2), 18 (Hot Air Cooler 1) and 19 (Hot Air Cooler 2).

Assessment of the following emission parameters associated with each source was performed during October 2012:

- Velocity;
- Volumetric Flow rate;
- Moisture Content;
- Carbon Monoxide, Carbon Dioxide and Oxygen (for determination of Dry Gas Density);
- Total Particulate Matter; and
- Fine Particulate (PM₁₀).

Concentrations of the following air contaminants were also assessed on Kiln 1 & Kiln 2 stack emissions:

- Total Fluoride;
- Sulfur Dioxide (SO₂ as SO₃) and Sulfuric Acid Mist (H₂SO₄ as SO₃);
- Hazardous Substances; and
- Oxides of Nitrogen (NO, NO₂, NO_x and Equivalent NO₂).

Laboratory analysis was conducted by the following laboratories, which hold NATA accreditation for the specified tests:

- Steel River Testing Pty. Ltd., NATA accreditation number 18079, performed the following analysis detailed in report number 3607-M, 3628-M, 3658-M, 3607-P, 3628-P, 3658-P:
 - Total Particulate;
 - Fine Particulate (PM₁₀); and
 - Moisture
- Australian Laboratory Services (ALS), laboratory NATA accreditation number 825, performed the following analysis detailed in reports numbered EN1203967, and EN1204088:
 - Total Fluoride;
 - Sulfuric Acid Mist (H₂SO₄ as SO₃); and
 - Sulfur Dioxide (SO₂ as SO₃).
- Leeder Consulting, NATA accreditation number 14429, performed the following analysis detailed in report numbers M122309:
 - Hazardous Substances (Metals).

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2.0 Sampling Plane Requirements

The criteria for sampling planes are specified in AS 4323.1-1995.

Table 1 Criteria for Selection of Sampling Planes (AS4323.1-1995)

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

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.

- 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; and*
- f) The gas temperature at the sampling plane should preferably be above the dewpoint.*

The following stacks did not meet the above criteria in regards to distances from disturbances; as a result extra sampling points were added in accordance with AS 4323.1 – 1995 section 4.2:

- Pressing and Drying;
- Glaze Line;
- Selection Line;
- Spray Dryer; and
- Hot Air Coolers 1 & 2.

All other points sampled comply with the above criteria.

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3.0 Methodology

3.1 NATA Accredited Methods

The following methods are within the scope of our National Association of Testing Authorities (NATA) accreditation. Accreditation Number 2778 (14391) and are approved for the sampling and analysis of gases. Specific details of the methods are available on request.

All sampling and analysis is conducted according to the methods in **Table 2**.

Table 2 AECOM NATA Endorsed Methods

NSW EPA Approved Methods	USEPA Methods	Method Title
AS4323.1 (NSW EPA TM-1)	USEPA (2000) Method 1	Selection of sampling positions
AS4323.2 (NSW EPA TM-15)	USEPA (2000) Method 5 under approved circumstances	Determination of total particulate matter – isokinetic manual sampling – gravimetric method
NSW EPA TM-2	USEPA (2000) Method 2 or 2C or USEPA (1999) Method 2F or 2G or 2H (as appropriate)	Determination of stack gas velocity and volumetric flow rate (type s pitot tube)
NSW EPA TM-3	USEPA (2000) Method 8 (for sampling and analysis only if interference from fluorides, free ammonia and/or dimethyl aniline has been demonstrated to the satisfaction of the chief Scientist, EPA) (as appropriate)	Determination of sulfuric acid mist emissions from stationary sources
NSW EPA TM-4	USEPA (2000) Method 6 or 6A or 6B or USEPA (1996) Method 6C or ISO (1989) Method 7934 or ISO (1992) Method 7935 or ISO (1993) Method 10396 or ISO (1998) Method 11632 (as appropriate)	Determination of Sulfur Dioxide (SO ₂) emissions from stationary sources
NSW EPA TM-9	USEPA (2000) Method 13A or 13B (as appropriate)	Determination of total fluoride emissions from stationary sources
NSW EPA TM-11	USEPA (2000) Method 7 or 7A or 7B or 7C or 7D or USEPA (1990) Method 7E or USEPA (1996) Method 20 or ISO (1993) Method 10396 (as appropriate). NO _x analysers may be substituted in Method 7E provided the performance Specifications of the method are met. Both NO and NO _x must be directly measured.	Nitrogen dioxide (NO ₂) or nitric oxide (NO)
NSW EPA TM-12	USEPA (2000) Method 29 or USEPA (2000) Method 102 (for mercury only in hydrogen rich streams) (as appropriate)	Type 1 substances (elements antimony (Sb), arsenic (As), cadmium (Cd), lead (Pb) or mercury (Hg) or any compound containing one or more of those elements)

Table 2 Continued AECOM NATA Endorsed Methods

NSW EPA Approved Methods	USEPA Methods	Method Title
NSW EPA TM-13	USEPA (2000) Method 29 (Analysis for tin and vanadium to be done by Inductively Coupled Argon Plasma Emission Spectroscopy (ICAP) as defined in USEPA Method 29) or USEPA (1986) Method 7910 (for vanadium only) or USEPA (1986) Method 7911 (for vanadium only) (as appropriate)	Type 2 substances (elements beryllium (Be), chromium (Cr), cobalt (Co), manganese (Mn), nickel (Ni), selenium (Se), tin (Sn) or vanadium (V) or any compound containing one or more of those elements)
NSW EPA TM-14	USEPA (2000) Method 29	Cadmium (Cd) or mercury (Hg) or any compound containing one or more of those elements
NSW EPA TM-22	USEPA (2000) Method 4	Determination of moisture content in stack gases
NSW EPA TM-23	USEPA (2000) Method 3	Gas analysis for the determination of dry molecular weight
NSW EPA OM-5	USEPA (1997) Method 201 or 201A (as appropriate)	Determination of PM ₁₀ emissions

4.0 Sampling Location

Table 3 provides a summary of the locations sampled by AECOM at the National Ceramic Industries Australia Rutherford Site during October 2012.

Table 3 Sampling Location Summary

Discharge Description	Clay Preparation (CP1) (EPL 1)	Pressing and Drying (PD1) (EPL2)	Dryer (D1) (EPL5)	Dryer (D2) (EPL6)	Glaze Line (EPL9)
Duct Shape	Circular	Circular	Circular	Circular	Circular
Construction Material	Metal	Metal	Metal	Metal	Metal
Duct Dimensions (mm)	995	1000	490	490	1000
Minimum No. Sampling Points	12	12	8	8	12
Sampling Ports	2	2	2	2	2
Min. Points/Traverse	6	6	4	4	6
Disturbance	No	Yes	No	No	Yes
Distance from Upstream Disturbance ¹	6	4	10	8	4
Type of Disturbance	Junction	Junction	Fan	Fan	Junction
Distance from Downstream Disturbance ¹	15	15	8	20	15
Type of Disturbance	Stack Exit	Stack Exit	Stack Exit	Stack Exit	Stack Exit
Ideal Sampling Location	Yes	No	Yes	Yes	No
Correction Factors Applied	No	Yes	No	No	Yes
Total No. Points Sampled	12	16	8	8	16
Points/Traverse	6	8	4	4	8
Sampling Performed to Standard ²	Yes ³	Yes ⁴	Yes ³	Yes ³	Yes ⁴

Notes ¹ Expressed in equivalent stack diameters

² AS 4323.1 (1995) Stationary source emissions Method 1 – Selection of sampling positions

³ AS 4323.1 (1995) Section 4.1

⁴ AS 4323.1 (1995) Section 4.2

Emission Source Sampling Location Summary (continued)

Discharge Description	Selection Line (SL1,2,3,4) (EPL10)	Spray Dryer (SD1) (EPL12)	Kiln (KP1) (EPL14)	Kiln (KP2) (EPL15)	Hot Air Cooler (HAC1) (EPL18)	Hot Air Cooler (HAC2) (EPL19)
Duct Shape	Circular	Circular	Circular	Circular	Circular	Circular
Construction Material	Metal	Metal	Metal	Metal	Metal	Metal
Duct Dimensions (mm)	490	1385	830	830	1000	1200
Minimum No. Sampling Points	8	12	12	12	12	12
Sampling Ports	2	2	2	2	2	2
Min. Points/Traverse	4	6	6	6	6	6
Disturbance	Yes	Yes	No	No	Yes	Yes
Distance from Upstream Disturbance ¹	4	7	7	7	3	4
Type of Disturbance	Fan	Bend	Bend	Fan Entry	Bend	Fan
Distance from Downstream Disturbance ¹	6	5	4	5	3	4
Type of Disturbance	Stack Exit	Stack Exit	Stack Exit	Stack Exit	Stack Exit	Stack Exit
Ideal Sampling Location	No	No	Yes	Yes	No	No
Correction Factors Applied	Yes	Yes	No	No	Yes	Yes
Total No. Points Sampled	12	16	12	12	16	16
Points/Traverse	6	8	6	6	8	8
Sampling Performed to Standard ²	Yes ⁴	Yes ⁴	Yes ³	Yes ³	Yes ⁴	Yes ⁴

Notes ¹ Expressed in equivalent stack diameters

² AS 4323.1 (1995) Stationary source emissions Method 1 – Selection of sampling positions

³ AS 4323.1 (1995) Section 4.1

⁴ AS 4323.1 (1995) Section 4.2

5.0 Equipment Calibration

AECOM has a calibration schedule to ensure the emission testing equipment is maintained in good order and with known calibration. Equipment used in this project was calibrated according to the procedures and frequency identified in the AECOM Calibration Schedule. Details of the schedule and the calibration calculations are available on request.

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6.0 Results

A summary of results obtained from stack emissions testing performed during October 2012 is provided in **Tables 4 - 6**.

Emission data particular to each emission source investigated is presented in **Tables 8 - 20**. Element Hazardous Substances (metals) results are presented in **Table 21** and **22**. All emission concentrations are converted to standard conditions of 0°C, dry gas and 1 atmosphere pressure for comparison with appropriate regulatory limits.

For comparison with EPL requirements Oxides of Nitrogen, Total Particulate and Fine Particulate (PM₁₀) emission concentrations determined within the Kiln stacks exhausts have been corrected to 18% O₂ based on the measured oxygen content within the sampling plane during the testing period.

AECOM has a calculated limit of uncertainty in regards to results. The estimation of measurement uncertainty in source testing is conducted to provide an indication of the precision of the measurement result and a degree of confidence in the range of values the reported result may represent. The measurement of uncertainty has been calculated at ±13.6%.

Field sheets and final calculations can be referred to in **Appendix A**. Raw and Calculated Oxides of Nitrogen data is attached in **Appendix B**. Analytical laboratory result certificates are provided in **Appendix C**.

Table 4 Summary Particulate Emission Monitoring Results, October 2012

Stack	Fine Particulate (PM ₁₀) (mg/m ³)	Total Particulate (mg/m ³)	Regulatory Limit (mg/m ³)*
Clay Preparation (CP1) (EPL 1)	0.85	0.64	20
Pressing and Drying (PD1) (EPL 2)	1.3	0.47	20
Dryer (D1) (EPL 5)	0.84	2.0	20
Dryer (D2) (EPL 6)	0.88	1.3	20
Glaze Line (EPL 9)	<0.2	0.42	20
Selection Line (SL 1,2,3,4) (EPL 10)	<0.27	<0.21	20
Spray Dryer (SD1) (EPL 10)	0.62	5.1	20
Hot Air Cooler (HAC 1) (EPL 18)	<0.19	0.28	5
Hot Air Cooler (HAC 2) (EPL 19)	0.49	<0.21	5

*Note:- Regulatory limit only applies to Total Particulate.

Table 5 Kiln 1 and Kiln 2 Emission Monitoring Results Summary, October 2012

Pollutant	Kiln 1 (EPL 14)	Kiln 2 (EPL 15)	Regulatory Limit
Fine Particulate (at 18% O ₂) (PM ₁₀) (mg/m ³)	1.1	0.78	N/A
Total Particulate (at 18% O ₂) (mg/m ³)	0.68	0.48	20
Total Fluoride (as HF) (mg/m ³)	3.6	3.8	5
Sulfuric Acid Mist (H ₂ SO ₄ as SO ₃) (mg/m ³)	1.5	6.5	100
Sulfur Dioxide (SO ₂ as SO ₃) (mg/m ³)	130	150	NA
Total Hazardous Substances (Metals) (mg/m ³)	0.26	0.80	1
Cadmium (mg/m ³)	0.0024	0.00085	0.1
Mercury (mg/m ³)	0.00079	0.00068	0.1

Table 6 Kiln 1 and 2 Gaseous Data Results, October 2012

Pollutant	Kiln 1 (EPL 14)	Kiln 2 (EPL 15)	Regulatory Limit
Date Sampled	17-Oct-12	16-Oct-12	
Time Sampled	10:56-12:56	11:08-12:08	
Stack Gas Flowrate (m ³ /s) (0°C, dry gas, 1atm pressure)	7.5	5.5	
Total Oxides of Nitrogen (as Equivalent NO ₂) (mg/m ³) at 18% O ₂	33	36	100
Total Oxides of Nitrogen (as Equivalent NO ₂) (mg/s) at 18% O ₂	247.5	198	NA
Nitrogen Oxide (NO) (mg/m ³) at 18% O ₂	14	15	NA
Nitrogen Oxide (NO) (mg/s) at 18% O ₂	105	82.5	NA
Nitrogen Dioxide (NO ₂) (mg/m ³) at 18% O ₂	10.9	12.6	NA
Nitrogen Dioxide (NO ₂) (mg/s) at 18% O ₂	81.8	69.3	NA
Total Oxides of Nitrogen (NO _x) (mg/m ³) at 18% O ₂	25	28	NA
Total Oxides of Nitrogen (NO _x) (mg/s) at 18% O ₂	187.5	154	NA
Oxygen (O ₂) %	17.8	16.9	NA

USEPA Method 201A, Section 6.3.5, specifies that the fine particulate (PM₁₀) results are acceptable provided the calculated aerodynamic cut size (D₅₀) for the test lies between 9.0 and 11.0 µm. The calculated (D₅₀) for each PM₁₀ test is shown in **Table 7** below.

Table 7 Fine Particulate (PM₁₀) Calculate Aerodynamic Cut Size (D₅₀) Results

Emission Source	Calculated Aerodynamic Cut Size (D ₅₀) (µm)
Clay Preparation Stack	10.5
Pressing and Drying Stack	9.4
Dryer 1 Stack	10.2
Dryer 2 Stack	10.6
Glaze Line Stack	10.0
Selection Line Stack	10.2
Spray Dryer Stack	12.2
Hot Air Cooling Stack 1	9.8
Hot Air Cooling Stack 2	9.9
Kiln 1 Stack	10.8
Kiln 2 Stack	10.9

With the exception of the Spray Dryer stack all of these calculated values meet the criteria for the aerodynamic cut size (D₅₀) conditions stated above. The discrepancies in the cut size results are due to the variability in the moisture content within the gas stream.

Table 8 Clay Prep Stack Total Particulate and Fine Particulate (PM₁₀) Results, 23 October 2012

Sampling Conditions:					
Stack internal diameter at test location	995	mm			
Stack gas temperature (average)	28.0	°C	301.2	K	
Stack pressure (average)	1017	hPa			
Stack gas velocity (average, stack conditions)	14	m/s			
Stack gas flowrate (stack conditions)	11	m ³ /s			
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	9.9	m ³ /s			
Fine Particulate (PM₁₀) Testing					
Test Period	11:25	-	12:28		
Fine Particulate (PM ₁₀) Mass	0.6	mg			
Gas Volume Sampled	0.702	m ³			
Fine Particulate (PM ₁₀) Emission* ¹	0.85	mg/m ³			
Fine Particulate (PM ₁₀) Mass Emission Rate* ²	8.4	mg/s			
Regulatory Limit	N/A				
Total Particulate Testing					
Test Period	11:25	-	12:28		
Total Particulate Mass	0.5	mg			
Gas Volume Sampled	0.782	m ³			
Total Particulate Emission* ¹	0.64	mg/m ³			
Total Particulate Mass Emission Rate* ²	6.3	mg/s			
Regulatory Limit	20	mg/m ³			
Moisture Content (%)	1.2				
Gas Density (dry at 1 atmosphere)	1.29	kg/m³			
Dry Molecular Weight	28.8	g/g-mole			

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 9 Pressing and Drying Stack Total Particulate and Fine Particulate (PM₁₀) Results, 22 October 2012

Sampling Conditions:					
Stack internal diameter at test location	1000	mm			
Stack gas temperature (average)	29.5	°C	302.7	K	
Stack pressure (average)	1009	hPa			
Stack gas velocity (average, stack conditions)	12	m/s			
Stack gas flowrate (stack conditions)	9.4	m ³ /s			
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	8.3	m ³ /s			
Fine Particulate (PM₁₀) Testing					
Test Period	11:00	-	12:23		
Fine Particulate (PM ₁₀) Mass	1.6	mg			
Gas Volume Sampled	1.26	m ³			
Fine Particulate (PM ₁₀) Emission* ¹	1.3	mg/m ³			
Fine Particulate (PM ₁₀) Mass Emission Rate* ²	11	mg/s			
Regulatory Limit	N/A				
Total Particulate Testing					
Test Period	11:00	-	12:23		
Total Particulate Mass	0.4	mg			
Gas Volume Sampled	0.86	m ³			
Total Particulate Emission* ¹	0.47	mg/m ³			
Total Particulate Mass Emission Rate* ²	3.9	mg/s			
Regulatory Limit	50	mg/m ³			
Moisture Content (%)	2.0				
Gas Density (dry at 1 atmosphere)	1.29	kg/m³			
Dry Molecular Weight	28.8	g/g-mole			

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 10 Dryer 1 Stack Total Particulate and Fine Particulate (PM₁₀) Results, 18 October 2012

Sampling Conditions:				
Stack internal diameter at test location	490 mm			
Stack gas temperature (average)	120.0 °C	393.2 K		
Stack pressure (average)	1017 hPa			
Stack gas velocity (average, stack conditions)	10 m/s			
Stack gas flowrate (stack conditions)	1.9 m ³ /s			
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	1.3 m ³ /s			
Fine Particulate (PM₁₀) Testing				
Test Period	9:57 - 11:00			
Fine Particulate (PM ₁₀) Mass	0.6 mg			
Gas Volume Sampled	0.715 m ³			
Fine Particulate (PM ₁₀) Emission* ¹	0.84 mg/m ³			
Fine Particulate (PM ₁₀) Mass Emission Rate* ²	1.1 mg/s			
Regulatory Limit	N/A			
Total Particulate Testing				
Test Period	9:57 - 11:00			
Total Particulate Mass	1.6 mg			
Gas Volume Sampled	0.781 m ³			
Total Particulate Emission* ¹	2 mg/m ³			
Total Particulate Mass Emission Rate* ²	2.5 mg/s			
Regulatory Limit	20 mg/m ³			
Moisture Content (%)	5.2			
Gas Density (dry at 1 atmosphere)	1.29 kg/m³			
Dry Molecular Weight	28.9 g/g-mole			

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 11 Dryer 2 Stack Total Particulate and Fine Particulate (PM₁₀) Results, 18 October 2012

Sampling Conditions:					
Stack internal diameter at test location	490	mm			
Stack gas temperature (average)	122.8	°C	396.0	K	
Stack pressure (average)	1017	hPa			
Stack gas velocity (average, stack conditions)	11	m/s			
Stack gas flowrate (stack conditions)	2.1	m ³ /s			
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	1.4	m ³ /s			
Fine Particulate (PM₁₀) Testing					
Test Period	11:54	-	12:58		
Fine Particulate (PM ₁₀) Mass	0.6	mg			
Gas Volume Sampled	0.678	m ³			
Fine Particulate (PM ₁₀) Emission* ¹	0.88	mg/m ³			
Fine Particulate (PM ₁₀) Mass Emission Rate* ²	1.2	mg/s			
Regulatory Limit	N/A				
Total Particulate Testing					
Test Period	11:54	-	12:58		
Total Particulate Mass	1	mg			
Gas Volume Sampled	0.78	m ³			
Total Particulate Emission* ¹	1.3	mg/m ³			
Total Particulate Mass Emission Rate* ²	1.8	mg/s			
Regulatory Limit	20	mg/m ³			
Moisture Content (%)	5.2				
Gas Density (dry at 1 atmosphere)	1.30	kg/m³			
Dry Molecular Weight	28.9	g/g-mole			

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 12 Glaze Line Stack Total Particulate and Fine Particulate (PM₁₀) Results, 22 October 2012

Sampling Conditions:					
Stack internal diameter at test location	1000	mm			
Stack gas temperature (average)	30.0	°C	303.2	K	
Stack pressure (average)	1009	hPa			
Stack gas velocity (average, stack conditions)	15	m/s			
Stack gas flowrate (stack conditions)	12	m ³ /s			
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	10	m ³ /s			
Fine Particulate (PM₁₀) Testing					
Test Period	12:39	-	14:02		
Fine Particulate (PM ₁₀) Mass	<0.2	mg			
Gas Volume Sampled	0.987	m ³			
Fine Particulate (PM ₁₀) Emission* ¹	<0.2	mg/m ³			
Fine Particulate (PM ₁₀) Mass Emission Rate* ²	<2.1	mg/s			
Regulatory Limit	N/A				
Total Particulate Testing					
Test Period	12:39	-	14:02		
Total Particulate Mass	0.4	mg			
Gas Volume Sampled	0.964	m ³			
Total Particulate Emission* ¹	0.42	mg/m ³			
Total Particulate Mass Emission Rate* ²	4.4	mg/s			
Regulatory Limit	20	mg/m ³			
Moisture Content (%)	1.9				
Gas Density (dry at 1 atmosphere)	1.29	kg/m³			
Dry Molecular Weight	28.8	g/g-mole			

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 13 Selection Line Stack Total Particulate and Fine Particulate (PM₁₀) Results, 15 October 2012

Sampling Conditions:				
Stack internal diameter at test location	490	mm		
Stack gas temperature (average)	36.4	°C	309.6	K
Stack pressure (average)	1020	hPa		
Stack gas velocity (average, stack conditions)	2.5	m/s		
Stack gas flowrate (stack conditions)	0.47	m ³ /s		
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	0.41	m ³ /s		
Fine Particulate (PM₁₀) Testing				
Test Period	11:23	-	12:23	
Fine Particulate (PM ₁₀) Mass	<0.2	mg		
Gas Volume Sampled	0.729	m ³		
Fine Particulate (PM ₁₀) Emission* ¹	<0.27	mg/m ³		
Fine Particulate (PM ₁₀) Mass Emission Rate* ²	<0.11	mg/s		
Regulatory Limit	N/A			
Total Particulate Testing				
Test Period	11:23	-	12:23	
Total Particulate Mass	<0.2	mg		
Gas Volume Sampled	0.946	m ³		
Total Particulate Emission* ¹	<0.21	mg/m ³		
Total Particulate Mass Emission Rate* ²	<0.086	mg/s		
Regulatory Limit	20	mg/m ³		
Moisture Content (%)		1.7		
Gas Density (dry at 1 atmosphere)		1.29	kg/m ³	
Dry Molecular Weight		28.8	g/g-mole	

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 14 Spray Dryer Stack Total Particulate and Fine Particulate (PM₁₀) Results, 19 October 2012

Sampling Conditions:					
Stack internal diameter at test location	1385	mm			
Stack gas temperature (average)	89.1	°C	362.3	K	
Stack pressure (average)	1014	hPa			
Stack gas velocity (average, stack conditions)	22	m/s			
Stack gas flowrate (stack conditions)	34	m ³ /s			
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	22	m ³ /s			
Fine Particulate (PM₁₀) Testing					
Test Period	10:06	-	11:30		
Fine Particulate (PM ₁₀) Mass	0.4	mg			
Gas Volume Sampled	0.642	m ³			
Fine Particulate (PM ₁₀) Emission* ¹	0.62	mg/m ³			
Fine Particulate (PM ₁₀) Mass Emission Rate* ²	14	mg/s			
Regulatory Limit	N/A				
Total Particulate Testing					
Test Period	10:06	-	11:30		
Total Particulate Mass	4.7	mg			
Gas Volume Sampled	0.924	m ³			
Total Particulate Emission* ¹	5.1	mg/m ³			
Total Particulate Mass Emission Rate* ²	120	mg/s			
Regulatory Limit	20	mg/m ³			
Moisture Content (%)	11.0				
Gas Density (dry at 1 atmosphere)	1.29	kg/m³			
Dry Molecular Weight	28.9	g/g-mole			

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 15 Hot Air Cooler Stack Total Particulate and Fine Particulate (PM¹⁰) Results, 23 October 2012

Sampling Conditions:				
Stack internal diameter at test location	1000 mm			
Stack gas temperature (average)	77.7 °C	350.9 K		
Stack pressure (average)	1013 hPa			
Stack gas velocity (average, stack conditions)	27 m/s			
Stack gas flowrate (stack conditions)	21 m ³ /s			
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	16 m ³ /s			
Fine Particulate (PM¹⁰) Testing				
Test Period	10:35 - 11:59			
Fine Particulate (PM ¹⁰) Mass	<0.2 mg			
Gas Volume Sampled	1.03 m ³			
Fine Particulate (PM ¹⁰) Emission* ¹	<0.19 mg/m ³			
Fine Particulate (PM ¹⁰) Mass Emission Rate* ²	<3 mg/s			
Regulatory Limit	N/A			
Total Particulate Testing				
Test Period	10:35 - 11:59			
Total Particulate Mass	0.4 mg			
Gas Volume Sampled	1.42 m ³			
Total Particulate Emission* ¹	0.28 mg/m ³			
Total Particulate Mass Emission Rate* ²	4.5 mg/s			
Regulatory Limit	5 mg/m ³			
Moisture Content (%)	1.5			
Gas Density (dry at 1 atmosphere)	1.29 kg/m³			
Dry Molecular Weight	28.8 g/g-mole			

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 16 Hot Air Cooler 2 Stack Total Particulate and Fine Particulate (PM₁₀) Results, 23 October 2012

Sampling Conditions:	
Stack internal diameter at test location	1200 mm
Stack gas temperature (average)	81.7 °C 354.9 K
Stack pressure (average)	1017 hPa
Stack gas velocity (average, stack conditions)	17 m/s
Stack gas flowrate (stack conditions)	19 m ³ /s
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	15 m ³ /s
Fine Particulate (PM₁₀) Testing	
Test Period	12:13 - 13:36
Fine Particulate (PM ₁₀) Mass	0.5 mg
Gas Volume Sampled	1.02 m ³
Fine Particulate (PM ₁₀) Emission* ¹	0.49 mg/m ³
Fine Particulate (PM ₁₀) Mass Emission Rate* ²	7.1 mg/s
Regulatory Limit	N/A
Total Particulate Testing	
Test Period	12:13 - 13:36
Total Particulate Mass	<0.2 mg
Gas Volume Sampled	0.936 m ³
Total Particulate Emission* ¹	<0.21 mg/m ³
Total Particulate Mass Emission Rate* ²	<3.1 mg/s
Regulatory Limit	5 mg/m ³
Moisture Content (%)	0.9
Gas Density (dry at 1 atmosphere)	1.29 kg/m³
Dry Molecular Weight	28.8 g/g-mole

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 17 Kiln 1 Stack Total Particulate, Fine Particulate (PM₁₀) and Fluoride Results, 26 October 2012

Sampling Conditions:				
Stack internal diameter at test location	830	mm		
Stack gas temperature (average)	118.4	°C	391.6	K
Stack pressure (average)	1006	hPa		
Stack gas velocity (average, stack conditions)	14	m/s		
Stack gas flowrate (stack conditions)	7.5	m ³ /s		
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	5	m ³ /s		
Fine Particulate (PM₁₀) Testing				
Test Period	11:04	-	12:08	
Fine Particulate (PM ₁₀) Mass	0.7	mg		
Gas Volume Sampled	0.643	m ³		
Fine Particulate (PM ₁₀) Emission* ¹ at 18% O ₂	1.1	mg/m ³		
Fine Particulate (PM ₁₀) Mass Emission Rate* ² at 18% O ₂	5.3	mg/s		
Regulatory Limit at 18% O ₂	NA			
Total Particulate Testing				
Test Period	11:04	-	12:08	
Total Particulate Mass	0.7	mg		
Gas Volume Sampled	0.996	m ³		
Total Particulate Emission* ¹ at 18% O ₂	0.68	mg/m ³		
Total Particulate Mass Emission Rate* ² at 18% O ₂	3.4	mg/s		
Regulatory Limit at 18% O ₂	20	mg/m ³		
Particulate Fluoride Testing				
Test Period	11:04	-	12:08	
Particulate Fluoride Mass	1.77	mg		
Gas Volume Sampled	1.03	m ³		
Particulate Fluoride Emission* ¹	1.7	mg/m ³		
Particulate Fluoride Mass Emission Rate* ²	8.5	mg/s		
Regulatory Limit	NA			
Gaseous Fluoride Testing				
Test Period	11:04	-	12:08	
Gaseous Fluoride Mass	2	mg		
Gas Volume Sampled	1.03	m ³		
Gaseous Fluoride Emission* ¹	1.9	mg/m ³		
Gaseous Fluoride Mass Emission Rate* ²	9.5	mg/s		
Regulatory Limit	NA			
Moisture Content (%)	4.4			
Gas Density (dry at 1 atmosphere)	1.30	kg/m³		
Dry Molecular Weight	29	g/g-mole		

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 18 Kiln 1 Hazardous Substances (Metals), Sulfuric Acid Mist (H₂SO₄ as SO₃) and Sulfur Dioxide (SO₂ as SO₃) Results 17 October 2012

Sampling Conditions:				
Stack internal diameter at test location	830	mm		
Stack gas temperature (average)	122.2	°C	395.4	K
Stack pressure (average)	1017	hPa		
Stack gas velocity (average, stack conditions)	13	m/s		
Stack gas flowrate (stack conditions)	6.9	m ³ /s		
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	4.6	m ³ /s		
Hazardous Substances (Metals) Testing				
Test Period	12:48	-	14:14	
Hazardous Substances (Metals) Mass	0.33	mg		
Gas Volume Sampled	1.26	m ³		
Hazardous Substances (Metals) Emission* ¹	0.26	mg/m ³		
Hazardous Substances (Metals) Mass Emission Rate* ²	1.2	mg/s		
Regulatory Limit	1	mg/m ³		
Sulfuric Acid Mist (H₂SO₄ as SO₃) Testing				
Test Period	12:48	-	14:14	
Sulfuric Acid Mist (H ₂ SO ₄ as SO ₃) Mass	2	mg		
Gas Volume Sampled	1.36	m ³		
Sulfuric Acid Mist (H ₂ SO ₄ as SO ₃) Emission* ¹	1.5	mg/m ³		
Sulfuric Acid Mist (H ₂ SO ₄ as SO ₃) Mass Emission Rate* ²	7	mg/s		
Regulatory Limit	100	mg/m ³		
Sulfur Dioxide (SO₂ as SO₃) Testing				
Test Period	12:48	-	14:14	
Sulfur Dioxide (SO ₂ as SO ₃) Mass	180	mg		
Gas Volume Sampled	1.36	m ³		
Sulfur Dioxide (SO ₂ as SO ₃) Emission* ¹	130	mg/m ³		
Sulfur Dioxide (SO ₂ as SO ₃) Mass Emission Rate* ²	610	mg/s		
Regulatory Limit	N/A			
Moisture Content (%)	4.1			
Gas Density (dry at 1 atmosphere)	1.30	kg/m ³		
Dry Molecular Weight	29	g/g-mole		

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 19 Kiln 2 Stack Total Particulate, Fine Particulate (PM₁₀) and Total Fluoride 16 October 2012

Sampling Conditions:			
Stack internal diameter at test location	830	mm	
Stack gas temperature (average)	150.9	°C	424.1 K
Stack pressure (average)	1013	hPa	
Stack gas velocity (average, stack conditions)	16	m/s	
Stack gas flowrate (stack conditions)	8.8	m ³ /s	
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	5.5	m ³ /s	
Fine Particulate (PM₁₀) Testing			
Test Period	11:12	-	12:13
Fine Particulate (PM ₁₀) Mass	0.6	mg	
Gas Volume Sampled	0.636	m ³	
Fine Particulate (PM ₁₀) Emission*1 at 18% O ₂	0.78	mg/m ³	
Fine Particulate (PM ₁₀) Mass Emission Rate*2 at 18% O ₂	4.3	mg/s	
Regulatory Limit at 18% O ₂	NA	mg/m ³	
Total Particulate Testing			
Test Period	11:12	-	12:13
Total Particulate Mass	0.6	mg	
Gas Volume Sampled	1.03	m ³	
Total Particulate Emission*1 at 18% O ₂	0.48	mg/m ³	
Total Particulate Mass Emission Rate*2 at 18% O ₂	2.7	mg/s	
Regulatory Limit at 18% O ₂	20	mg/m ³	
Total Fluoride Testing			
Test Period	11:12	-	12:13
Total Fluoride Mass	4.2	mg	
Gas Volume Sampled	1.09	m ³	
Total Fluoride Emission*1	3.8	mg/m ³	
Total Fluoride Mass Emission Rate*2	21	mg/s	
Regulatory Limit	5	mg/m ³	
Moisture Content (%)	2.5		
Gas Density (dry at 1 atmosphere)	1.30	kg/m ³	
Dry Molecular Weight	29	g/g-mole	

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 20 Kiln 2 Hazardous Substances (Metals), Sulfuric Acid Mist (H₂SO₄ as SO₃) and Sulfur Dioxide (SO₂ as SO₃) Results 16 October 2012

Sampling Conditions:				
Stack internal diameter at test location	830	mm		
Stack gas temperature (average)	153.0	°C	426.2	K
Stack pressure (average)	1013	hPa		
Stack gas velocity (average, stack conditions)	16	m/s		
Stack gas flowrate (stack conditions)	8.9	m ³ /s		
Stack gas flowrate (0°C, dry gas, 1 atm pressure)	5.6	m ³ /s		
Hazardous Substances (Metals) Testing				
Test Period	12:24	-	13:36	
Hazardous Substances (Metals) Mass	0.93	mg		
Gas Volume Sampled	1.17	m ³		
Hazardous Substances (Metals) Emission ^{*1}	0.80	mg/m ³		
Hazardous Substances (Metals) Mass Emission Rate ^{*2}	4.4	mg/s		
Regulatory Limit	1	mg/m ³		
Sulfuric Acid Mist (H₂SO₄ as SO₃) Testing				
Test Period	12:24	-	13:36	
Sulfuric Acid Mist (H ₂ SO ₄ as SO ₃) Mass	8	mg		
Gas Volume Sampled	1.23	m ³		
Sulfuric Acid Mist (H ₂ SO ₄ as SO ₃) Emission ^{*1}	6.5	mg/m ³		
Sulfuric Acid Mist (H ₂ SO ₄ as SO ₃) Mass Emission Rate ^{*2}	37	mg/s		
Regulatory Limit	100	mg/m ³		
Sulfur Dioxide (SO₂ as SO₃) Testing				
Test Period	12:24	-	13:36	
Sulfur Dioxide (SO ₂ as SO ₃) Mass	180	mg		
Gas Volume Sampled	1.23	m ³		
Sulfur Dioxide (SO ₂ as SO ₃) Emission ^{*1}	150	mg/m ³		
Sulfur Dioxide (SO ₂ as SO ₃) Mass Emission Rate ^{*2}	840	mg/s		
Regulatory Limit	NA	mg/m ³		
Moisture Content (%)	2.2			
Gas Density (dry at 1 atmosphere)	1.30	kg/m ³		
Dry Molecular Weight	29	g/g-mole		

Notes *1 Emission concentration at Standard conditions of 0°C, 1 atm, dry gas

*2 Mass emission rate determined from pre and post-test sampling flow measurements and the respective test moisture content. See Q_{std} in field sheets and final calculations "Stack Analysis - Final Calculations" for each test.

Table 21 Kiln 1 Elemental Hazardous Substances (Metals) Results

Sample	Total Particulate Metals (mg)	Total Particulate Metals (mg/m ³)	Total Gaseous Metals (mg)	Total Gaseous Metals (mg/m ³)	Total Oxidisable Mercury (mg)	Total Oxidisable Mercury (mg/m ³)	Total (mg)	Total (mg/m ³)	Mass Emission Rate (mg/s)
Antimony	0.00002	0.000016	<0.0001	<0.000079			0.00002	0.000016	0.000073
Arsenic	0.002	0.0016	0.00075	0.00059			0.003	0.0024	0.011
Beryllium	<0.0001	<0.000079	<0.0001	<0.000079			<0.000015	<0.000012	<0.000055
Cadmium	0.0022	0.0017	0.00035	0.00028			0.003	0.0024	0.011
Chromium	0.0029	0.0023	0.00085	0.00067			0.004	0.0032	0.015
Cobalt	<0.0001	<0.000079	<0.0001	<0.000079			<0.00015	<0.00012	<0.00055
Copper	0.003	0.0024	0.00045	0.00036			0.003	0.0024	0.011
Lead	0.0015	0.0012	0.0013	0.001			0.003	0.0024	0.011
Magnesium	0.094	0.074	0.0037	0.0029			0.1	0.079	0.36
Manganese	0.25	0.2	0.08	0.063			0.3	0.24	1.1
Mercury	0.00007	0.000055	0.0013	0.001	<0.00025	<0.0002	0.001	0.00079	0.0036
Nickel	0.0014	0.0011	0.0073	0.0058			0.009	0.0071	0.033
Selenium	0.0024	0.0019	0.0031	0.0025			0.006	0.0047	0.022
Thallium	<0.0001	<0.000079	<0.0001	<0.000079			<0.004	<0.0032	<0.015
Tin	0.00078	0.00062	0.00035	0.00028			0.001	0.00079	0.0036
Vanadium	0.00005	0.00004	<0.0001	<0.000079			0.00005	0.00004	0.00018
Zinc	<4.6	<3.6	0.015	0.012			0.015	0.012	0.055
Total Hazardous Metals*	0.26	0.21	0.095	0.075	<0.00025	<0.0002	0.33	0.26	1.2
Total Metals	0.36	0.29	0.11	0.09			0.45	0.35	1.6

* Total does not include Copper, Magnesium and Zinc as they are classed non-hazardous

Table 22 Kiln 2 Elemental Hazardous Substances (Metals) Results

Sample	Total Particulate Metals (mg)	Total Particulate Metals (mg/m ³)	Total Gaseous Metals (mg)	Total Gaseous Metals (mg/m ³)	Total Oxidisable Mercury (mg)	Total Oxidisable Mercury (mg/m ³)	Total (mg)	Total (mg/m ³)	Mass Emission Rate (mg/s)
Antimony	<0.0001	<0.000085	<0.0001	<0.000085			<0.002	<0.0017	<0.0095
Arsenic	0.0027	0.0023	<0.0001	<0.000085			0.0027	0.0023	0.013
Beryllium	0.00012	0.0001	<0.0001	<0.000085			0.00012	0.0001	0.00056
Cadmium	0.00075	0.00064	0.00025	0.00021			0.001	0.00085	0.0047
Chromium	0.01	0.0085	0.0022	0.0019			0.01	0.0085	0.047
Cobalt	<0.0001	<0.000085	<0.0001	<0.000085			<0.00015	<0.00013	<0.00072
Copper	0.0064	0.0055	0.0008	0.00068			0.007	0.006	0.033
Lead	0.0092	0.0079	0.00025	0.00021			0.009	0.0077	0.043
Magnesium	0.72	0.62	0.016	0.014			0.7	0.6	3.3
Manganese	0.91	0.78	0.0092	0.0079			0.9	0.77	4.3
Mercury	0.00025	0.00021	0.00055	0.00047	<0.00025	<0.00021	0.0008	0.00068	0.0038
Nickel	0.0025	0.0021	0.00035	0.0003			0.003	0.0026	0.014
Selenium	0.0031	0.0026	0.00025	0.00021			0.003	0.0026	0.014
Thallium	<0.0001	<0.000085	<0.0001	<0.000085			<0.004	<0.0034	<0.019
Tin	0.0019	0.0016	<0.0001	<0.000085			0.0019	0.0016	0.0089
Vanadium	0.00025	0.00021	<0.0001	<0.000085			0.00025	0.00021	0.0012
Zinc	5.7	4.9	0.0096	0.0082			6	5.1	28
Total Hazardous Metals*	0.94	0.8	0.013	0.011	<0.00025	<0.00021	0.93	0.8	4.4
Total Metals	7.4	6.3	0.039	0.034			7.6	6.5	36

* Total does not include Copper, Magnesium and Zinc as they are classed non-hazardous

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Appendix A

Field Sheets and Final Calculations (207 pages)

Appendix A Field Sheets and Final Calculations (207 pages)

Appendix B

Laboratory Analytical Reports (24 pages)

Appendix B Laboratory Analytical Reports (24 pages)

STACK EMISSION - PARTICULATES REPORT

Origin: AECOM - Newcastle
Project: 60274108

Report : 3607-0-P

Page 1 of 1

Description : Stack Emission Samples
Received: 18-Oct-12

Date : 22-Oct-12

Report To : Chris Burns
17 Warabrook Blvd, Warabrook NSW 2304

Copy to: FILE

Thimble ID		Total Particulate Matter (g)
N11	Thimble	0.0006
N3	Thimble	0.0036
N9	Thimble	<0.0002
XY	Thimble	0.0006
SRT-44	Filter	0.0004
SRT-45	Filter	0.0047
SRT-48	Filter	<0.0002
SRT-49	Filter	<0.0002

STACK EMISSION - MOISTURE REPORT

Origin: AECOM - Newcastle
Project: 60274108

Report : 3607-0-M Page 1 of 1

Description : Stack Emission Samples
Received: 18-Oct-12

Date : 22-Oct-12

Report To : Chris Burns
17 Warabrook Blvd, Warabrook NSW 2304

Copy to: FILE

Jar ID	Moisture (g)
205A	6.9
99	7.8
F29	7.9
F99	4.4
FA4	18.8
FA8	10.9
G027	16.0
G046	6.6
G058	16.9
G060	22.1
G300	13.0
GS004	19.3
GS012	11.1

STACK EMISSION - MOISTURE REPORT

Origin: AECOM - Newcastle

Project: 60274108

Report : 3658-0-M

Page 1 of 1

Description : Stack Emission Samples

Received: 31-Oct-12

Date : 06-Nov-12

Report To : Peter Waddingham

17 Warabrook Blvd, Warabrook NSW 2304

Copy to: FILE

Jar ID	Moisture (g)
ARO	4.9
FA4	15.1
G009	9.8
P3	8.7

Steel River Testing

5/11 McIntosh Drive, Mayfield West, NSW 2304

Phone: 02 49677880

STACK EMISSION - PARTICULATES REPORT

Origin: AECOM - Newcastle
Project: 60274108

Report : 3658-0-P Page 1 of 1

Description : Stack Emission Samples
Received: 31-Oct-12

Date : 06-Nov-12

Report To : Peter Waddingham
17 Warabrook Blvd, Warabrook NSW 2304

Copy to: FILE

Thimble ID		Total Particulate Matter (g)
N20	Thimble	0.0007
N22	Thimble	0.0007



NATA Accredited Laboratory 18079
Accredited for compliance with
ISO/IEC 17025

Note : 1. Sampled by Client

Reported By: M. Campbell
Michael Campbell

Determined in Accordance With:
Particulate matter - total in stack gases by
gravimetric using in-house M300

Steel River Testing

5/11 McIntosh Drive, Mayfield West, NSW 2304

Phone: 02 49677880

STACK EMISSION - MOISTURE REPORT

Origin: AECOM - Newcastle
Project: 60274108

Report : 3628-0-M Page 1 of 1

Description : Stack Emission Samples
Received: 24-Oct-12

Date : 31-Oct-12

Report To : Chad Whitburn
17 Warabrook Blvd, Warabrook NSW 2304

Copy to: FILE

Jar ID	Moisture (g)
134	6.7
140	14.2
166	8.1
179	7.3
F21	9.8
F23	9.0
F24	6.9
F26	14.4
F28	7.3
G012	9.8
G013	8.3
G032	10.1
G100	8.1
P1	7.8
P2	11.4
P8	12.9



NATA Accredited Laboratory 18079
Accredited for compliance with
ISO/IEC 17025

Reported By: M. Campbell
Michael Campbell

Determined in Accordance With:
Moisture content in stack gases by gravimetric
using in-house M301

Steel River Testing

5/11 McIntosh Drive, Mayfield West, NSW 2304

Phone: 02 49677880

STACK EMISSION - PARTICULATES REPORT

Origin: AECOM - Newcastle

Project: 60274108

Report : 3628-0-P

Page 1 of 1

Description : Stack Emission Samples

Received: 24-Oct-12

Date : 31-Oct-12

Report To : Chad Whitburn

17 Warabrook Blvd, Warabrook NSW 2304

Copy to: FILE

Thimble ID		Total Particulate Matter (g)
N27	Thimble	0.0006
S36	Thimble	0.0005
SRT-19	Filter	0.0005
SRT-42	Filter	0.0006
SRT-43	Filter	0.0006
SRT-46	Filter	0.0016
SRT-50	Filter	0.0010
SRT-51	Filter	0.0016
SRT-53	Filter	0.0004
SRT-55	Filter	0.0004
SRT-56	Filter	<0.0002
SRT-57	Filter	0.0004
SRT-58	Filter	<0.0002
SRT-59	Filter	<0.0002



NATA Accredited Laboratory 18079
Accredited for compliance with
ISO/IEC 17025

Note : 1. Sampled by Client

Reported By:

M. Campbell

Michael Campbell

Determined in Accordance With:
Particulate matter - total in stack gases by
gravimetric using in-house M300

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EN1204088	Page	: 1 of 4
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Newcastle
Contact	: MR JAMES LANG	Contact	: Peter Keyte
Address	: 17 WARABROOK BOULEVARDE WARABROOK NSW, AUSTRALIA 2304	Address	: 5 Rosegum Road Warabrook NSW Australia 2304
E-mail	: james.lang@aecom.com	E-mail	: peter.keyte@als.com.au
Telephone	: +61 02 4911 4900	Telephone	: 61-2-4968-9433
Facsimile	: +61 02 4911 4999	Facsimile	: +61-2-4968 0349
Project	: 60274108	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 26-OCT-2012
Sampler	: CB, CC, JL	Issue Date	: 01-NOV-2012
Site	: ----		
Quote number	: ----	No. of samples received	: 6
		No. of samples analysed	: 6

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- Filters were supplied by the client. Filter preparation may not meet ALS method requirements.

Page : 3 of 4
 Work Order : EN1204088
 Client : AECOM Australia Pty Ltd
 Project : 60274108



Analytical Results

Sub-Matrix: **FILTER** (Matrix: **AIR**)

Client sample ID

				KILN 1 PARTICULATE FLUORIDE	INLET PARTICULATE FLUORIDE	PARTICULATE FLUORIDE BLANK	----	----
Client sampling date / time				[26-OCT-2012]	[26-OCT-2012]	26-OCT-2012 15:00	----	----
Compound	CAS Number	LOR	Unit	EN1204088-001	EN1204088-003	EN1204088-006	----	----
EA144C: Gaseous and Particulate Fluorides								
Fluoride (Particulate) as HF	----	1	µg/filter	1770	59	1	----	----



Analytical Results

Sub-Matrix: IMPINGER SOLUTION (Matrix: AIR)

Client sample ID

Client sampling date / time

				KILN 1 GASEOUS FLUORIDE	INLET GASEOUS FLUORIDE	GASEOUS FLUORIDE BLANK	----	----
				[26-OCT-2012]	[26-OCT-2012]	[26-OCT-2012]	----	----
Compound	CAS Number	LOR	Unit	EN1204088-002	EN1204088-004	EN1204088-005	----	----
EA144C: Gaseous and Particulate Fluorides								
Fluoride (as HF)	----	0.1	mg/sample	2.0	0.8	0.4	----	----
Volume - Impinger	----	1	mL	340	315	355	----	----

CERTIFICATE OF ANALYSIS

Work Order	: EN1203967	Page	: 1 of 4
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Newcastle
Contact	: MR JAMES LANG	Contact	: Peter Keyte
Address	: 17 WARABROOK BOULEVARDE WARABROOK NSW, AUSTRALIA 2304	Address	: 5 Rosegum Road Warabrook NSW Australia 2304
E-mail	: james.lang@aecom.com	E-mail	: peter.keyte@als.com.au
Telephone	: +61 02 4911 4900	Telephone	: 61-2-4968-9433
Facsimile	: +61 02 4911 4999	Facsimile	: +61-2-4968 0349
Project	: 60274108	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 60274108		
C-O-C number	: 154782	Date Samples Received	: 18-OCT-2012
Sampler	: C.B., C.C., J.L.	Issue Date	: 23-OCT-2012
Site	: ---		
Quote number	: ---	No. of samples received	: 10
		No. of samples analysed	: 10

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Dianne Blane	Laboratory Supervisor	Newcastle

Page : 2 of 4
Work Order : EN1203967
Client : AECOM Australia Pty Ltd
Project : 60274108



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Page : 3 of 4
 Work Order : EN1203967
 Client : AECOM Australia Pty Ltd
 Project : 60274108



Analytical Results

Sub-Matrix: IMPINGER SOLUTION (Matrix: AIR)

Client sample ID

Client sampling date / time

				KILN 1 FLUORIDE	KILN 2 FLUORIDE	KILN 1 INLET FLUORIDE	FLUORIDE BLANK	KILN 1 IPA
				17-OCT-2012 16:00	16-OCT-2012 16:00	17-OCT-2012 16:00	17-OCT-2012 16:00	17-OCT-2012 16:00
Compound	CAS Number	LOR	Unit	EN1203967-001	EN1203967-002	EN1203967-003	EN1203967-004	EN1203967-005
EA143C: Sulfuric Acid and Sulfur Dioxide (as SO₃)								
Volume - Impinger	----	1	mL	---	---	---	---	250
Sulfuric Acid as SO ₃	----	2	mg/sample	---	---	---	---	2
EA144C: Gaseous and Particulate Fluorides								
Fluoride (as HF)	----	0.1	mg/sample	6.6	4.2	2.4	<0.1	---
Volume - Impinger	----	1	mL	335	265	345	362	---

Page : 4 of 4
 Work Order : EN1203967
 Client : AECOM Australia Pty Ltd
 Project : 60274108



Analytical Results

Sub-Matrix: IMPINGER SOLUTION (Matrix: AIR)

Client sample ID

Client sampling date / time

				KILN 2 IPA	IPA BLANK	KILN 1 H2O2	KILN 2 H2O2	H2O2 BLANK
				16-OCT-2012 16:00	17-OCT-2012 16:00	17-OCT-2012 16:00	16-OCT-2012 16:00	17-OCT-2012 16:00
Compound	CAS Number	LOR	Unit	EN1203967-006	EN1203967-007	EN1203967-008	EN1203967-009	EN1203967-010
EA143C: Sulfuric Acid and Sulfur Dioxide (as SO3)								
Volume - Impinger	---	1	mL	117	556	---	---	---
Sulfuric Acid as SO3	---	2	mg/sample	8	<2	---	---	---
Volume - Impinger	---	1	mL	---	---	365	280	265
Sulfur Dioxide as SO3	---	10	mg/sample	---	---	180	180	<10

Chartered Chemists

2-Nov-2012

AECOM

17 Warabrook Bvde
Warabrook

NSW 2304
Attention: James Lang

REPORT NUMBER: M122309

Site/Client Ref: 60274108

Order No: 60274108

CERTIFICATE OF ANALYSIS

SAMPLES: Eighteen samples were received for analysis

DATE RECEIVED: 26-Oct-2012

DATE COMMENCED: 26-Oct-2012

METHODS: See Attached Results

RESULTS: Please refer to attached pages for results.

Note: Results are based on samples as received at Leeder Consulting's laboratories

REPORTED BY:



Ming Dai
Chemist



NATA Accredited Laboratory Number: 2562

Accredited for compliance
with ISO/IEC 17025.

(I) RESULTS

Report N°: M122309

Matrix: Filter

Method: USEPA M29 (Analysis only) - MA-1400.FL.M29.02

Sample units are expressed in µg total

Analyte Name	PQL	Leeder ID	2012026682	2012026683	2012026684	2012026685
		Client ID	Klin 1 Metals 1	Klin 2 Metals 1	Metals 12	Method
						Blank
Sb	0.05		0.07	0.05	nd	nd
As	0.05		0.76	1.7	0.09	nd
Be	0.05		nd	0.17	nd	nd
Cd	0.05		2.1	0.10	nd	nd
Cr	0.05		3.3	4.9	1.7	nd
Co	0.05		nd	nd	nd	nd
Cu	0.05		1.1	1.3	0.18	nd
Pb	0.05		1.1	2.0	0.89	nd
Mg	1		230	780	150	nd
Mn	0.05		120	120	40	nd
Hg	0.05		0.12	nd	nd	nd
Ni	0.05		0.91	1.2	0.31	nd
Se	0.05		1.2	0.52	nd	nd
Tl	0.05		nd	nd	nd	nd
Sn	0.05		0.60	0.80	0.12	nd
V	0.25		nd	nd	nd	nd
Zn	0.05		3300	9700	4600	nd

(I) RESULTS

Report N°: M122309

Matrix: Impinger Solution

Method: USEPA M29 (Analysis only) - MA-1400.IMP.M29.06 Metals in Impingers (ug total)

Sample units are expressed in µg total

		Leeder ID	2012026686	2012026687	2012026688
		Client ID	Klin 1 Metals 3	Klin 1 Metals 4	Klin 1 Metals 5A
Analyte Name	PQL				
Sb	0.1		nd	nd	nd
As	0.1		1.3	0.8	nd
Be	0.1		nd	nd	nd
Cd	0.1		0.1	0.4	nd
Cr	0.1		1.3	0.9	2.6
Co	0.1		nd	nd	nd
Cu	0.1		2.6	1.0	0.3
Pb	0.1		1.3	1.4	0.1
Mg	1		15	7	3
Mn	0.1		170	96	18
Hg	0.1		nd	1.4	nd
Ni	0.1		0.8	7.4	0.2
Se	0.1		1.2	3.2	0.4
Tl	0.1		nd	nd	nd
Sn	0.1		0.3	0.4	0.1
V	0.1		0.1	nd	nd
Zn	0.1		47	21	7.1
Sample Volume (ML)			89	330	97

(I) RESULTS

Report N°: M122309

Matrix: Impinger Solution

Method: USEPA M29 (Analysis only) - MA-1400.IMP.M29.06 Metals in Impingers (ug total)

Sample units are expressed in µg total

		Leeder ID	2012026689	2012026690	2012026691	2012026692	2012026693	2012026694	2012026695
		Client ID	Klin 1 Metals 5C	Klin 2 Metals 3	Klin 2 Metals 4	Klin 2 Metals 5A	Klin 2 Metals 5C	Metals 8A	Metals 8B
Analyte Name	PQL								
Sb	0.1		nd	nd	nd	nd	nd	nd	nd
As	0.1		nd	1.1	nd	nd	nd	nd	nd
Be	0.1		nd	nd	nd	nd	nd	nd	nd
Cd	0.1		nd	0.7	0.3	0.1	nd	nd	nd
Cr	0.1		nd	6.8	2.2	4.2	0.5	nd	0.4
Co	0.1		nd	nd	nd	nd	nd	nd	nd
Cu	0.1		0.8	5.8	1.3	1.9	0.7	0.5	nd
Pb	0.1		0.2	8.1	0.3	0.3	0.3	nd	nd
Mg	1		5	91	19	17	2	1	1
Mn	0.1		7.7	830	24	16	12	3.8	4.1
Hg	0.1		nd	0.3	0.6	nd	nd	nd	nd
Ni	0.1		0.1	1.6	0.4	0.2	0.3	nd	nd
Se	0.1		nd	2.6	0.3	0.1	nd	nd	nd
Tl	0.1		nd	nd	nd	nd	nd	nd	nd
Sn	0.1		nd	1.2	nd	nd	nd	nd	nd
V	0.1		nd	0.3	nd	nd	nd	nd	nd
Zn	0.1		2.3	550	15	1.2	2.5	nd	0.4
Sample Volume (ML)			250	91	300	100	250	310	100

(I) RESULTS

Report N°: M122309

Matrix: Impinger Solution

Method: USEPA M29 (Analysis only) - MA-1400.IMP.M29.06 Metals in Impingers (ug total)

Sample units are expressed in µg total

Analyte Name	PQL	Leeder ID	2012026696	2012026697	2012026699
		Client ID	Metals 9	Metals 11	Method
					Blank
Sb	0.1		nd	nd	nd
As	0.1		nd	nd	nd
Be	0.1		nd	nd	nd
Cd	0.1		nd	nd	nd
Cr	0.1		nd	nd	nd
Co	0.1		nd	nd	nd
Cu	0.1		nd	0.6	nd
Pb	0.1		nd	nd	nd
Mg	1		2	3	nd
Mn	0.1		11	100	nd
Hg	0.1		nd	nd	nd
Ni	0.1		nd	nd	nd
Se	0.1		nd	nd	nd
Tl	0.1		nd	nd	nd
Sn	0.1		nd	nd	nd
V	0.1		nd	0.3	nd
Zn	0.1		5.4	6.3	nd
Sample Volume (ML)			200	250	

(I) RESULTS

Report N°: M122309

Matrix: KMnO4

Method: USEPA M29 (Analysis only) - MA-1400.IMP.M29.04 Mercury in Impingers (ug total)

Sample units are expressed in µg total

Analyte Name	PQL	Leeder ID	2012026700	2012026701	2012026702
		Client ID	Klin 1 Metals 5B	Klin 2 Metals 5B	Metals 10
Hg	2		nd	nd	nd
Sample Volume (ML)			400	400	100

Matrix: KMnO4

Method: USEPA M29 (Analysis only) - MA-1400.IMP.M29.04 Mercury in Impingers (ug total)

Sample units are expressed in µg total

Analyte Name	PQL	Leeder ID	2012026703	2012026704
		Client ID	Klin 1 Metals 5B	Method
			Duplicate	Blank
Hg	2		nd	nd

(II) QUALITY CONTROL

Report N°: M122309

Matrix: Filter

Method: USEPA M29 (Analysis only) - MA-1400.FL.M29.02

Quality Control Results are expressed in Percent Recovery of expected result

Analyte Name	PQL	Leeder ID	2012026705	2012026706
		Client ID	Matrix	Matrix
			Spike	Spike Dup
Sb			109	109
As			109	109
Be			108	110
Cd			108	106
Cr			109	108
Co			106	106
Cu			105	105
Pb			107	105
Mg			104	104
Mn			U	U
Hg			109	109
Ni			111	109
Se			102	107
Tl			105	106
Sn			113	112
V			110	110
Zn			U	U

(II) QUALITY CONTROL

Report N°: M122309

Matrix: Impinger Solution

Method: USEPA M29 (Analysis only) - MA-1400.IMP.M29.06 Metals in Impingers (ug total)

Quality Control Results are expressed in Percent Recovery of expected result

Analyte Name	Leeder ID	2012026707	2012026708
	Client ID	Matrix 3	Klin 1 Metals 3
	PQL	Spike	Spike Dup
Sb		113	112
As		111	109
Be		113	119
Cd		111	110
Cr		113	110
Co		109	107
Cu		112	109
Pb		111	112
Mg		107	106
Mn		U	U
Hg		121	125
Ni		114	113
Se		117	108
Tl		110	110
Sn		116	118
V		112	110
Zn		U	U

(II) QUALITY CONTROL

Report N°: M122309

Matrix: KMnO4

Method: USEPA M29 (Analysis only) - MA-1400.IMP.M29.04 Mercury in Impingers (ug total)

Quality Control Results are expressed in Percent Recovery of expected result

Analyte Name	Leeder ID	2012026709	2012026710
	Client ID	Klin 1 Metals 5B	Klin 1 Metals 5B
	PQL	Spike	Spike Dup
	Hg	96	97

QUALIFIERS / NOTES FOR REPORTED RESULTS

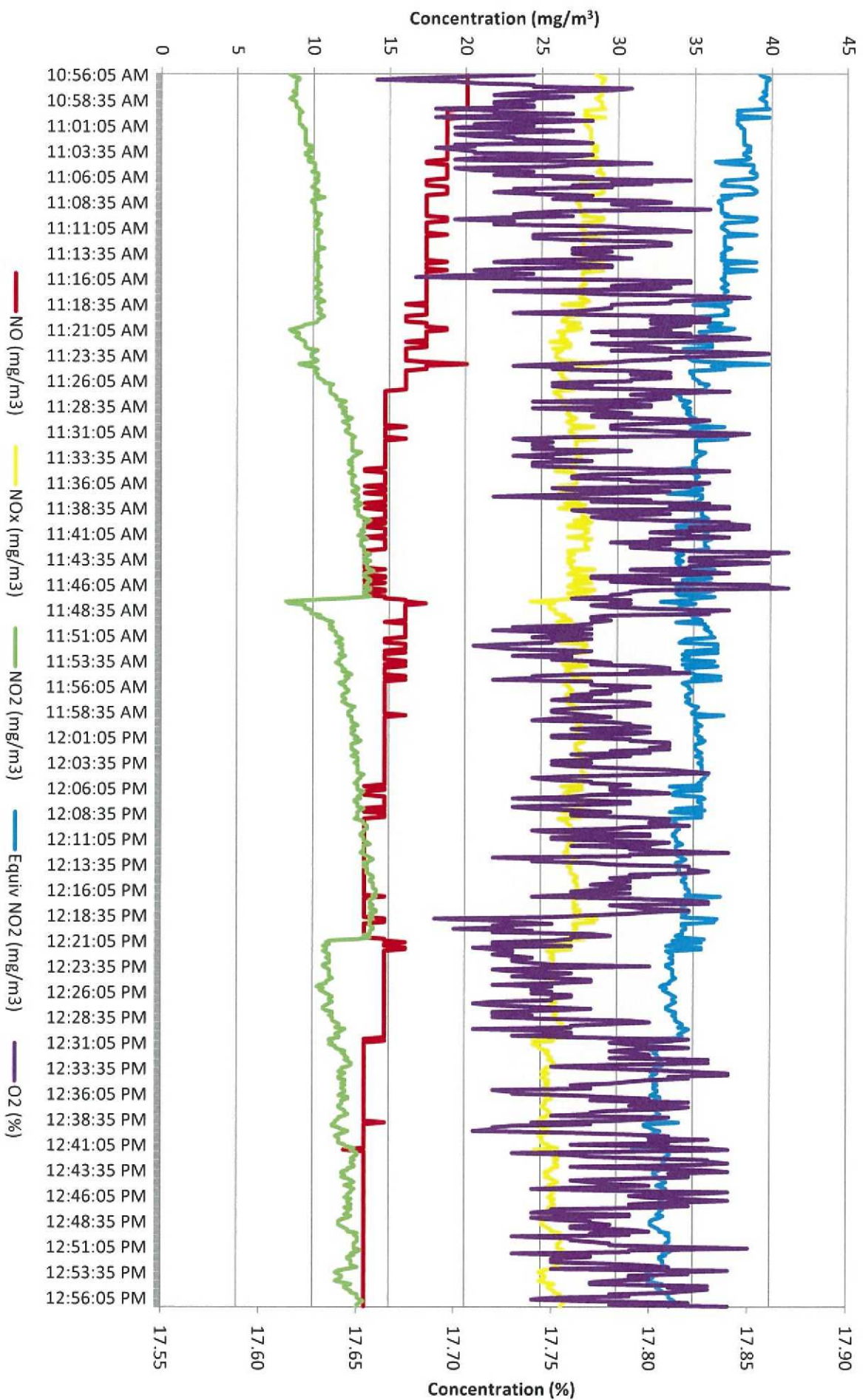
PQL	Practical Quantitation Limit
<i>is</i>	Insufficient Sample to perform this analysis.
T	Tentative identification based on computer library search of mass spectra.
ND	Not Detected – The analyte was not detected above the reported PQL.
NC	Not calculated and/or Results below PQL
<i>nr</i>	Not Requested for analysis.
R	Rejected Result – results for this analysis failed QC checks.
SQ	Semi-Quantitative result – quantitation based on a generic response factor for this class of analyte.
IM	Inappropriate method of analysis for this compound
U	Unable to provide Quality Control data – high levels of compounds in sample interfered with analysis of QC results.
UF	Unable to provide Quality Control data- Surrogates failed QC checks due to sample matrix effects
L	Analyte detected at a level above the linear response of calibration curve.
C1	These compounds co-elute.
--	Parameter Not Determined
CT	Elevated concentration. Results reported from carbon tube analysis
**	Sample shows non-petroleum hydrocarbon profile

Appendix C

Raw and Calculated Gas Data (16 pages)

Appendix C Raw and Calculated Gas Data (16 pages)

60274108 Kiln 1 Oxides of Nitrogen and Oxygen Data Plot, 17 October 2012



Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	10:56:05 AM	15	20	19	29	4.1	8	27	39	17.74
17/10/12	10:56:15 AM	15	20	19	29	4.2	9	27	39	17.71
17/10/12	10:56:25 AM	15	20	19	29	4.4	9	27	40	17.68
17/10/12	10:56:35 AM	15	20	20	29	4.4	9	27	40	17.66
17/10/12	10:56:45 AM	15	20	19	29	4.3	9	27	40	17.70
17/10/12	10:56:55 AM	15	20	19	29	4.3	9	27	40	17.71
17/10/12	10:57:05 AM	15	20	19	29	4.3	9	27	40	17.74
17/10/12	10:57:15 AM	15	20	19	29	4.3	9	27	40	17.74
17/10/12	10:57:25 AM	15	20	19	29	4.3	9	27	40	17.79
17/10/12	10:57:35 AM	15	20	19	29	4.3	9	27	40	17.78
17/10/12	10:57:45 AM	15	20	19	29	4.2	9	27	39	17.75
17/10/12	10:57:55 AM	15	20	19	29	4.3	9	27	40	17.73
17/10/12	10:58:05 AM	15	20	20	29	4.3	9	27	40	17.72
17/10/12	10:58:15 AM	15	20	19	29	4.2	9	27	39	17.76
17/10/12	10:58:25 AM	15	20	19	29	4.1	8	27	39	17.74
17/10/12	10:58:35 AM	15	20	19	29	4.2	9	27	39	17.74
17/10/12	10:58:45 AM	15	20	19	29	4.3	9	27	40	17.72
17/10/12	10:58:55 AM	15	20	19	29	4.3	9	27	40	17.72
17/10/12	10:59:05 AM	15	20	19	29	4.3	9	27	40	17.74
17/10/12	10:59:15 AM	15	20	19	29	4.3	9	27	40	17.74
17/10/12	10:59:25 AM	15	20	19	29	4.4	9	27	40	17.69
17/10/12	10:59:35 AM	14	19	19	28	4.4	9	26	38	17.72
17/10/12	10:59:45 AM	14	19	19	28	4.5	9	26	38	17.72
17/10/12	10:59:55 AM	14	19	18	28	4.4	9	26	38	17.76
17/10/12	11:00:05 AM	14	19	19	28	4.4	9	26	38	17.72
17/10/12	11:00:15 AM	15	20	19	29	4.4	9	27	40	17.69
17/10/12	11:00:25 AM	14	19	19	28	4.4	9	26	38	17.74
17/10/12	11:00:35 AM	14	19	19	28	4.4	9	26	38	17.77
17/10/12	11:00:45 AM	14	19	19	28	4.4	9	26	38	17.74
17/10/12	11:00:55 AM	14	19	19	28	4.4	9	26	38	17.71
17/10/12	11:01:05 AM	14	19	19	28	4.5	9	26	38	17.74
17/10/12	11:01:15 AM	14	19	19	28	4.5	9	26	38	17.70
17/10/12	11:01:25 AM	14	19	19	28	4.6	9	26	38	17.73
17/10/12	11:01:35 AM	14	19	19	28	4.6	9	26	38	17.76
17/10/12	11:01:45 AM	14	19	19	28	4.6	9	26	38	17.73
17/10/12	11:01:55 AM	14	19	19	28	4.6	9	26	38	17.70
17/10/12	11:02:05 AM	14	19	19	28	4.6	9	26	38	17.71
17/10/12	11:02:15 AM	14	19	19	28	4.6	9	26	38	17.73
17/10/12	11:02:25 AM	14	19	18	28	4.6	9	26	38	17.73
17/10/12	11:02:35 AM	14	19	18	28	4.6	9	26	38	17.75
17/10/12	11:02:45 AM	14	19	18	28	4.6	9	26	38	17.77
17/10/12	11:02:55 AM	14	19	19	28	4.6	9	26	38	17.70
17/10/12	11:03:05 AM	14	19	18	29	4.8	10	26	39	17.71
17/10/12	11:03:15 AM	14	19	18	29	4.8	10	26	39	17.69
17/10/12	11:03:25 AM	14	19	19	28	4.7	10	26	38	17.70
17/10/12	11:03:35 AM	14	19	19	29	4.8	10	26	39	17.71
17/10/12	11:03:45 AM	14	19	18	28	4.6	9	26	38	17.71
17/10/12	11:03:55 AM	14	19	18	28	4.6	9	26	38	17.77
17/10/12	11:04:05 AM	14	19	18	28	4.7	10	26	38	17.76
17/10/12	11:04:15 AM	14	19	18	29	4.8	10	26	39	17.71
17/10/12	11:04:25 AM	14	19	19	28	4.7	10	26	38	17.70
17/10/12	11:04:35 AM	13	17	18	27	4.7	10	25	36	17.77
17/10/12	11:04:45 AM	13	17	18	27	4.9	10	25	37	17.80
17/10/12	11:04:55 AM	14	19	19	29	4.9	10	26	39	17.76
17/10/12	11:05:05 AM	14	19	19	29	4.9	10	26	39	17.75
17/10/12	11:05:15 AM	14	19	19	29	4.9	10	26	39	17.70
17/10/12	11:05:25 AM	14	19	19	29	4.9	10	26	39	17.71
17/10/12	11:05:35 AM	14	19	19	29	4.8	10	26	39	17.74
17/10/12	11:05:45 AM	14	19	19	29	5.0	10	26	39	17.73
17/10/12	11:05:55 AM	14	19	19	29	5.0	10	26	39	17.72
17/10/12	11:06:05 AM	14	19	19	29	5.0	10	26	39	17.77
17/10/12	11:06:15 AM	14	19	19	29	4.9	10	26	39	17.75
17/10/12	11:06:25 AM	13	17	18	28	5.0	10	25	37	17.82
17/10/12	11:06:35 AM	13	17	18	28	5.0	10	25	37	17.78
17/10/12	11:06:45 AM	13	17	18	27	4.9	10	25	37	17.80
17/10/12	11:06:55 AM	13	17	18	27	4.9	10	25	37	17.76
17/10/12	11:07:05 AM	14	19	18	29	4.8	10	26	39	17.78
17/10/12	11:07:15 AM	14	19	19	29	4.9	10	26	39	17.73
17/10/12	11:07:25 AM	14	19	19	29	5.0	10	26	39	17.74
17/10/12	11:07:35 AM	14	19	19	29	5.0	10	26	39	17.72
17/10/12	11:07:45 AM	14	19	18	29	4.9	10	26	39	17.74
17/10/12	11:07:55 AM	13	17	18	27	4.9	10	25	37	17.77
17/10/12	11:08:05 AM	13	17	18	28	5.2	11	25	37	17.76
17/10/12	11:08:15 AM	13	17	18	28	5.0	10	25	37	17.75
17/10/12	11:08:25 AM	13	17	18	27	4.8	10	25	37	17.80
17/10/12	11:08:35 AM	13	17	18	27	4.8	10	25	37	17.81
17/10/12	11:08:45 AM	13	17	18	27	4.9	10	25	37	17.78
17/10/12	11:08:55 AM	13	17	18	27	4.9	10	25	37	17.79
17/10/12	11:09:05 AM	13	17	18	27	4.9	10	25	37	17.79
17/10/12	11:09:15 AM	13	17	18	27	4.9	10	25	37	17.83
17/10/12	11:09:25 AM	13	17	18	27	4.9	10	25	37	17.76
17/10/12	11:09:35 AM	13	17	18	27	4.9	10	25	37	17.74
17/10/12	11:09:45 AM	13	17	18	28	5.1	10	25	37	17.73
17/10/12	11:09:55 AM	13	17	18	28	5.0	10	25	37	17.76

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	11:10:05 AM	14	19	19	29	5.0	10	26	39	17.72
17/10/12	11:10:15 AM	14	19	19	29	5.0	10	26	39	17.70
17/10/12	11:10:25 AM	14	19	19	29	4.9	10	26	39	17.73
17/10/12	11:10:35 AM	13	17	18	28	5.0	10	25	37	17.72
17/10/12	11:10:45 AM	13	17	18	28	5.0	10	25	37	17.72
17/10/12	11:10:55 AM	13	17	18	27	4.9	10	25	37	17.78
17/10/12	11:11:05 AM	13	17	18	27	4.9	10	25	37	17.79
17/10/12	11:11:15 AM	13	17	18	28	5.0	10	25	37	17.81
17/10/12	11:11:25 AM	13	17	18	28	5.1	10	25	37	17.82
17/10/12	11:11:35 AM	13	17	18	28	5.1	10	25	37	17.78
17/10/12	11:11:45 AM	14	19	19	29	5.0	10	26	39	17.74
17/10/12	11:11:55 AM	13	17	18	28	5.0	10	25	37	17.74
17/10/12	11:12:05 AM	13	17	18	28	5.0	10	25	37	17.74
17/10/12	11:12:15 AM	13	17	18	28	5.0	10	25	37	17.76
17/10/12	11:12:25 AM	13	17	18	28	5.0	10	25	37	17.80
17/10/12	11:12:35 AM	13	17	18	28	5.0	10	25	37	17.81
17/10/12	11:12:45 AM	13	17	18	28	5.0	10	25	37	17.81
17/10/12	11:12:55 AM	13	17	18	28	5.0	10	25	37	17.79
17/10/12	11:13:05 AM	13	17	18	28	5.2	11	25	37	17.76
17/10/12	11:13:15 AM	13	17	18	28	5.0	10	25	37	17.76
17/10/12	11:13:25 AM	13	17	18	28	5.0	10	25	37	17.78
17/10/12	11:13:35 AM	13	17	18	27	4.9	10	25	37	17.76
17/10/12	11:13:45 AM	13	17	18	28	5.0	10	25	37	17.77
17/10/12	11:13:55 AM	13	17	18	27	4.9	10	25	37	17.78
17/10/12	11:14:05 AM	13	17	18	28	5.0	10	25	37	17.79
17/10/12	11:14:15 AM	13	17	18	27	4.9	10	25	37	17.74
17/10/12	11:14:25 AM	14	19	19	29	5.0	10	26	39	17.72
17/10/12	11:14:35 AM	13	17	18	28	5.0	10	25	37	17.76
17/10/12	11:14:45 AM	13	17	18	28	5.0	10	25	37	17.78
17/10/12	11:14:55 AM	13	17	18	28	5.1	10	25	37	17.78
17/10/12	11:15:05 AM	13	17	18	28	5.0	10	25	37	17.73
17/10/12	11:15:15 AM	14	19	19	29	5.0	10	26	39	17.71
17/10/12	11:15:25 AM	13	17	18	28	5.0	10	25	37	17.72
17/10/12	11:15:35 AM	13	17	18	28	5.0	10	25	37	17.74
17/10/12	11:15:45 AM	13	17	18	28	5.0	10	25	37	17.70
17/10/12	11:15:55 AM	13	17	18	28	5.0	10	25	37	17.68
17/10/12	11:16:05 AM	13	17	18	27	4.9	10	25	37	17.74
17/10/12	11:16:15 AM	13	17	18	28	5.0	10	25	37	17.82
17/10/12	11:16:25 AM	13	17	18	28	5.0	10	25	37	17.82
17/10/12	11:16:35 AM	13	17	18	28	5.1	10	25	37	17.80
17/10/12	11:16:45 AM	13	17	18	28	5.0	10	25	37	17.78
17/10/12	11:16:55 AM	13	17	18	27	4.9	10	25	37	17.81
17/10/12	11:17:05 AM	13	17	18	28	5.0	10	25	37	17.80
17/10/12	11:17:15 AM	13	17	18	28	5.1	10	25	37	17.72
17/10/12	11:17:25 AM	13	17	18	28	5.0	10	25	37	17.76
17/10/12	11:17:35 AM	13	17	18	28	5.0	10	25	37	17.78
17/10/12	11:17:45 AM	13	17	17	28	5.0	10	25	37	17.83
17/10/12	11:17:55 AM	13	17	17	27	4.9	10	25	37	17.85
17/10/12	11:18:05 AM	13	17	18	28	5.1	10	25	37	17.83
17/10/12	11:18:15 AM	13	17	18	28	5.2	11	25	37	17.81
17/10/12	11:18:25 AM	13	17	18	28	5.0	10	25	37	17.81
17/10/12	11:18:35 AM	12	16	17	26	5.0	10	23	35	17.78
17/10/12	11:18:45 AM	13	17	18	28	5.0	10	25	37	17.78
17/10/12	11:18:55 AM	13	17	18	28	5.0	10	25	37	17.78
17/10/12	11:19:05 AM	13	17	18	28	5.1	10	25	37	17.77
17/10/12	11:19:15 AM	13	17	18	28	5.1	10	25	37	17.76
17/10/12	11:19:25 AM	13	17	18	28	5.0	10	25	37	17.73
17/10/12	11:19:35 AM	13	17	18	28	5.1	10	25	37	17.77
17/10/12	11:19:45 AM	12	16	17	27	5.2	11	24	35	17.82
17/10/12	11:19:55 AM	12	16	17	27	5.1	10	24	35	17.83
17/10/12	11:20:05 AM	12	16	17	26	5.0	10	23	35	17.80
17/10/12	11:20:15 AM	12	16	17	26	5.0	10	23	35	17.83
17/10/12	11:20:25 AM	13	17	18	27	4.9	10	25	37	17.80
17/10/12	11:20:35 AM	13	17	18	27	4.6	9	25	36	17.82
17/10/12	11:20:45 AM	13	17	17	27	4.5	9	24	36	17.81
17/10/12	11:20:55 AM	14	19	18	28	4.3	9	26	38	17.80
17/10/12	11:21:05 AM	14	19	18	27	4.1	8	26	37	17.81
17/10/12	11:21:15 AM	13	17	18	26	4.2	9	24	35	17.77
17/10/12	11:21:25 AM	13	17	18	26	4.4	9	24	36	17.82
17/10/12	11:21:35 AM	13	17	17	26	4.4	9	24	36	17.78
17/10/12	11:21:45 AM	13	17	17	26	4.3	9	24	36	17.84
17/10/12	11:21:55 AM	13	17	17	26	4.4	9	24	36	17.85
17/10/12	11:22:05 AM	13	17	17	27	4.5	9	24	36	17.83
17/10/12	11:22:15 AM	12	16	17	26	4.6	9	23	34	17.81
17/10/12	11:22:25 AM	13	17	18	27	4.6	9	25	36	17.77
17/10/12	11:22:35 AM	13	17	18	27	4.6	9	25	36	17.79
17/10/12	11:22:45 AM	13	17	17	27	4.6	9	25	36	17.80
17/10/12	11:22:55 AM	12	16	17	26	4.7	10	23	34	17.81
17/10/12	11:23:05 AM	12	16	17	26	5.0	10	23	35	17.78
17/10/12	11:23:15 AM	12	16	17	26	4.9	10	23	35	17.84
17/10/12	11:23:25 AM	12	16	17	26	4.8	10	23	35	17.86
17/10/12	11:23:35 AM	12	16	17	26	4.8	10	23	35	17.84
17/10/12	11:23:45 AM	12	16	17	26	4.8	10	23	35	17.81
17/10/12	11:23:55 AM	12	16	17	26	4.9	10	23	35	17.81

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	11:24:05 AM	12	16	17	26	5.0	10	23	35	17.79
17/10/12	11:24:15 AM	13	17	18	27	4.9	10	25	37	17.78
17/10/12	11:24:25 AM	15	20	19	29	4.4	9	27	40	17.75
17/10/12	11:24:35 AM	13	17	18	27	4.6	9	25	36	17.73
17/10/12	11:24:45 AM	13	17	18	27	4.9	10	25	37	17.76
17/10/12	11:24:55 AM	13	17	18	28	5.0	10	25	37	17.75
17/10/12	11:25:05 AM	12	16	17	26	4.9	10	23	35	17.79
17/10/12	11:25:15 AM	12	16	17	26	4.9	10	23	35	17.81
17/10/12	11:25:25 AM	12	16	17	26	5.0	10	23	35	17.79
17/10/12	11:25:35 AM	12	16	17	26	5.0	10	23	35	17.81
17/10/12	11:25:45 AM	12	16	17	26	5.0	10	23	35	17.81
17/10/12	11:25:55 AM	12	16	17	27	5.1	10	24	35	17.79
17/10/12	11:26:05 AM	12	16	17	27	5.2	11	24	35	17.79
17/10/12	11:26:15 AM	12	16	17	27	5.2	11	24	35	17.75
17/10/12	11:26:25 AM	12	16	17	27	5.5	11	24	36	17.77
17/10/12	11:26:35 AM	12	16	17	27	5.4	11	24	36	17.75
17/10/12	11:26:45 AM	12	16	17	27	5.4	11	24	36	17.76
17/10/12	11:26:55 AM	12	16	17	27	5.4	11	24	36	17.80
17/10/12	11:27:05 AM	11	15	17	26	5.4	11	22	34	17.84
17/10/12	11:27:15 AM	11	15	17	26	5.4	11	22	34	17.81
17/10/12	11:27:25 AM	11	15	17	26	5.5	11	22	34	17.79
17/10/12	11:27:35 AM	11	15	17	26	5.6	12	22	34	17.81
17/10/12	11:27:45 AM	11	15	17	26	5.6	12	22	34	17.81
17/10/12	11:27:55 AM	11	15	17	26	5.6	12	22	34	17.80
17/10/12	11:28:05 AM	11	15	17	27	5.9	12	23	35	17.74
17/10/12	11:28:15 AM	11	15	17	27	5.8	12	23	35	17.78
17/10/12	11:28:25 AM	11	15	17	26	5.7	12	23	34	17.80
17/10/12	11:28:35 AM	11	15	17	26	5.7	12	23	34	17.80
17/10/12	11:28:45 AM	11	15	17	27	5.9	12	23	35	17.74
17/10/12	11:28:55 AM	11	15	17	27	5.8	12	23	35	17.77
17/10/12	11:29:05 AM	11	15	17	27	5.9	12	23	35	17.78
17/10/12	11:29:15 AM	11	15	17	27	5.8	12	23	35	17.79
17/10/12	11:29:25 AM	11	15	17	27	5.9	12	23	35	17.77
17/10/12	11:29:35 AM	11	15	17	27	5.9	12	23	35	17.77
17/10/12	11:29:45 AM	11	15	17	27	6.1	13	23	35	17.80
17/10/12	11:29:55 AM	11	15	17	27	6.0	12	23	35	17.83
17/10/12	11:30:05 AM	11	15	17	27	5.8	12	23	35	17.82
17/10/12	11:30:15 AM	11	15	17	27	5.9	12	23	35	17.80
17/10/12	11:30:25 AM	11	15	17	27	6.0	12	23	35	17.78
17/10/12	11:30:35 AM	12	16	18	28	6.0	12	24	37	17.78
17/10/12	11:30:45 AM	11	15	17	27	6.0	12	23	35	17.78
17/10/12	11:30:55 AM	11	15	17	27	5.9	12	23	35	17.80
17/10/12	11:31:05 AM	11	15	17	27	5.9	12	23	35	17.82
17/10/12	11:31:15 AM	11	15	17	27	6.0	12	23	35	17.85
17/10/12	11:31:25 AM	11	15	17	27	6.1	13	23	35	17.84
17/10/12	11:31:35 AM	11	15	17	27	6.2	13	23	35	17.76
17/10/12	11:31:45 AM	12	16	18	29	6.1	13	25	37	17.73
17/10/12	11:31:55 AM	11	15	17	27	6.1	13	23	35	17.74
17/10/12	11:32:05 AM	11	15	17	27	6.1	13	23	35	17.75
17/10/12	11:32:15 AM	11	15	17	27	6.1	13	23	35	17.74
17/10/12	11:32:25 AM	11	15	17	27	6.1	13	23	35	17.74
17/10/12	11:32:35 AM	11	15	17	27	6.1	13	23	35	17.75
17/10/12	11:32:45 AM	11	15	17	27	6.1	13	23	35	17.74
17/10/12	11:32:55 AM	11	15	17	27	6.1	13	23	35	17.79
17/10/12	11:33:05 AM	11	15	17	28	6.4	13	23	36	17.77
17/10/12	11:33:15 AM	11	15	17	28	6.3	13	23	36	17.75
17/10/12	11:33:25 AM	11	15	17	27	6.2	13	23	35	17.73
17/10/12	11:33:35 AM	11	15	17	27	6.1	13	23	35	17.75
17/10/12	11:33:45 AM	11	15	17	27	6.1	13	23	35	17.75
17/10/12	11:33:55 AM	11	15	17	27	6.0	12	23	35	17.77
17/10/12	11:34:05 AM	11	15	17	27	6.1	13	23	35	17.74
17/10/12	11:34:15 AM	11	15	17	27	6.0	12	23	35	17.74
17/10/12	11:34:25 AM	11	15	17	27	6.1	13	23	35	17.74
17/10/12	11:34:35 AM	11	15	17	27	6.1	13	23	35	17.77
17/10/12	11:34:45 AM	10	13	17	26	6.1	13	21	33	17.81
17/10/12	11:34:55 AM	10	13	16	26	6.1	13	21	33	17.84
17/10/12	11:35:05 AM	11	15	17	27	6.0	12	23	35	17.81
17/10/12	11:35:15 AM	11	15	17	27	6.1	13	23	35	17.77
17/10/12	11:35:25 AM	11	15	17	27	6.2	13	23	35	17.76
17/10/12	11:35:35 AM	11	15	17	27	6.1	13	23	35	17.76
17/10/12	11:35:45 AM	11	15	17	27	6.1	13	23	35	17.79
17/10/12	11:35:55 AM	11	15	17	27	6.1	13	23	35	17.79
17/10/12	11:36:05 AM	11	15	17	27	6.1	13	23	35	17.83
17/10/12	11:36:15 AM	11	15	17	27	6.1	13	23	35	17.82
17/10/12	11:36:25 AM	10	13	17	26	6.2	13	22	33	17.82
17/10/12	11:36:35 AM	11	15	17	28	6.3	13	23	36	17.75
17/10/12	11:36:45 AM	11	15	17	28	6.3	13	23	36	17.76
17/10/12	11:36:55 AM	11	15	17	27	6.1	13	23	35	17.81
17/10/12	11:37:05 AM	10	13	17	26	6.2	13	22	33	17.78
17/10/12	11:37:15 AM	11	15	17	28	6.3	13	23	36	17.75
17/10/12	11:37:25 AM	11	15	17	28	6.3	13	23	36	17.72
17/10/12	11:37:35 AM	11	15	17	28	6.3	13	23	36	17.76
17/10/12	11:37:45 AM	11	15	17	27	6.2	13	23	35	17.80
17/10/12	11:37:55 AM	11	15	17	27	6.2	13	23	35	17.77

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	11:38:05 AM	10	13	17	27	6.4	13	22	34	17.83
17/10/12	11:38:15 AM	11	15	17	28	6.4	13	23	36	17.81
17/10/12	11:38:25 AM	11	15	17	27	6.2	13	23	35	17.84
17/10/12	11:38:35 AM	10	13	17	26	6.2	13	22	33	17.84
17/10/12	11:38:45 AM	11	15	17	28	6.3	13	23	36	17.76
17/10/12	11:38:55 AM	11	15	17	28	6.3	13	23	36	17.77
17/10/12	11:39:05 AM	11	15	17	28	6.3	13	23	36	17.81
17/10/12	11:39:15 AM	11	15	17	28	6.3	13	23	36	17.79
17/10/12	11:39:25 AM	11	15	17	28	6.4	13	23	36	17.77
17/10/12	11:39:35 AM	11	15	17	28	6.5	13	23	36	17.78
17/10/12	11:39:45 AM	10	13	17	27	6.7	14	22	34	17.81
17/10/12	11:39:55 AM	11	15	17	28	6.6	14	23	36	17.84
17/10/12	11:40:05 AM	11	15	17	28	6.5	13	23	36	17.84
17/10/12	11:40:15 AM	10	13	17	27	6.5	13	22	34	17.85
17/10/12	11:40:25 AM	10	13	17	27	6.5	13	22	34	17.82
17/10/12	11:40:35 AM	11	15	17	28	6.5	13	23	36	17.85
17/10/12	11:40:45 AM	11	15	17	28	6.4	13	23	36	17.82
17/10/12	11:40:55 AM	11	15	17	28	6.5	13	23	36	17.80
17/10/12	11:41:05 AM	11	15	17	28	6.4	13	23	36	17.82
17/10/12	11:41:15 AM	11	15	17	28	6.3	13	23	36	17.82
17/10/12	11:41:25 AM	10	13	17	27	6.5	13	22	34	17.84
17/10/12	11:41:35 AM	11	15	17	28	6.6	14	23	36	17.80
17/10/12	11:41:45 AM	11	15	17	28	6.4	13	23	36	17.81
17/10/12	11:41:55 AM	11	15	17	28	6.4	13	23	36	17.78
17/10/12	11:42:05 AM	11	15	17	28	6.4	13	23	36	17.81
17/10/12	11:42:15 AM	11	15	17	28	6.4	13	23	36	17.79
17/10/12	11:42:25 AM	11	15	17	28	6.5	13	23	36	17.79
17/10/12	11:42:35 AM	11	15	17	28	6.5	13	23	36	17.81
17/10/12	11:42:45 AM	10	13	17	27	6.5	13	22	34	17.82
17/10/12	11:42:55 AM	10	13	17	27	6.5	13	22	34	17.87
17/10/12	11:43:05 AM	10	13	17	27	6.7	14	22	34	17.85
17/10/12	11:43:15 AM	10	13	17	27	6.6	14	22	34	17.86
17/10/12	11:43:25 AM	10	13	17	27	6.5	13	22	34	17.82
17/10/12	11:43:35 AM	10	13	17	27	6.5	13	22	34	17.83
17/10/12	11:43:45 AM	10	13	17	27	6.7	14	22	34	17.82
17/10/12	11:43:55 AM	10	13	17	27	6.5	13	22	34	17.86
17/10/12	11:44:05 AM	10	13	17	27	6.6	14	22	34	17.84
17/10/12	11:44:15 AM	10	13	17	27	6.6	14	22	34	17.82
17/10/12	11:44:25 AM	10	13	17	27	6.6	14	22	34	17.82
17/10/12	11:44:35 AM	11	15	17	28	6.7	14	24	36	17.79
17/10/12	11:44:45 AM	10	13	17	27	6.8	14	22	35	17.82
17/10/12	11:44:55 AM	10	13	17	27	6.6	14	22	34	17.84
17/10/12	11:45:05 AM	10	13	17	27	6.5	13	22	34	17.82
17/10/12	11:45:15 AM	11	15	17	28	6.5	13	23	36	17.77
17/10/12	11:45:25 AM	11	15	17	28	6.6	14	23	36	17.77
17/10/12	11:45:35 AM	10	13	17	27	6.7	14	22	34	17.81
17/10/12	11:45:45 AM	10	13	17	27	6.7	14	22	34	17.78
17/10/12	11:45:55 AM	11	15	17	28	6.6	14	23	36	17.80
17/10/12	11:46:05 AM	10	13	17	27	6.6	14	22	34	17.86
17/10/12	11:46:15 AM	10	13	17	27	6.5	13	22	34	17.85
17/10/12	11:46:25 AM	10	13	17	27	6.7	14	22	34	17.87
17/10/12	11:46:35 AM	11	15	17	28	6.7	14	24	36	17.80
17/10/12	11:46:45 AM	11	15	17	28	6.5	13	23	36	17.79
17/10/12	11:46:55 AM	10	13	17	27	6.5	13	22	34	17.79
17/10/12	11:47:05 AM	10	13	17	27	6.6	14	22	34	17.78
17/10/12	11:47:15 AM	11	15	17	28	6.7	14	24	36	17.78
17/10/12	11:47:25 AM	11	15	17	27	6.0	12	23	35	17.76
17/10/12	11:47:35 AM	12	16	17	26	4.9	10	23	35	17.79
17/10/12	11:47:45 AM	12	16	16	24	4.0	8	22	33	17.78
17/10/12	11:47:55 AM	13	17	17	26	4.1	8	24	35	17.79
17/10/12	11:48:05 AM	12	16	16	26	4.6	9	23	34	17.77
17/10/12	11:48:15 AM	12	16	16	26	4.6	9	23	34	17.78
17/10/12	11:48:25 AM	12	16	16	26	4.6	9	23	34	17.80
17/10/12	11:48:35 AM	12	16	17	26	4.8	10	23	35	17.84
17/10/12	11:48:45 AM	12	16	17	26	4.8	10	23	35	17.82
17/10/12	11:48:55 AM	12	16	17	26	4.8	10	23	35	17.83
17/10/12	11:49:05 AM	12	16	17	27	5.1	10	24	35	17.78
17/10/12	11:49:15 AM	12	16	17	26	5.0	10	23	35	17.77
17/10/12	11:49:25 AM	12	16	17	27	5.2	11	24	35	17.77
17/10/12	11:49:35 AM	12	16	17	27	5.3	11	24	36	17.78
17/10/12	11:49:45 AM	11	15	17	26	5.5	11	22	34	17.77
17/10/12	11:49:55 AM	12	16	17	27	5.4	11	24	36	17.77
17/10/12	11:50:05 AM	12	16	17	27	5.4	11	24	36	17.76
17/10/12	11:50:15 AM	12	16	17	27	5.5	11	24	36	17.73
17/10/12	11:50:25 AM	12	16	17	27	5.4	11	24	36	17.77
17/10/12	11:50:35 AM	12	16	17	27	5.5	11	24	36	17.72
17/10/12	11:50:45 AM	12	16	17	28	5.6	12	24	36	17.76
17/10/12	11:50:55 AM	12	16	17	28	5.6	12	24	36	17.77
17/10/12	11:51:05 AM	12	16	17	28	5.6	12	24	36	17.75
17/10/12	11:51:15 AM	12	16	17	28	5.7	12	24	36	17.74
17/10/12	11:51:25 AM	11	15	17	27	5.8	12	23	35	17.77
17/10/12	11:51:35 AM	11	15	17	26	5.7	12	23	34	17.75
17/10/12	11:51:45 AM	11	15	17	26	5.6	12	22	34	17.75
17/10/12	11:51:55 AM	12	16	17	28	5.8	12	24	37	17.73

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	11:52:05 AM	12	16	17	28	5.8	12	24	37	17.71
17/10/12	11:52:15 AM	12	16	17	28	5.7	12	24	36	17.72
17/10/12	11:52:25 AM	12	16	18	28	5.8	12	24	37	17.73
17/10/12	11:52:35 AM	11	15	17	27	5.8	12	23	35	17.77
17/10/12	11:52:45 AM	12	16	18	28	5.8	12	24	37	17.76
17/10/12	11:52:55 AM	11	15	17	26	5.7	12	23	34	17.76
17/10/12	11:53:05 AM	11	15	17	27	5.9	12	23	35	17.73
17/10/12	11:53:15 AM	11	15	17	27	5.8	12	23	35	17.76
17/10/12	11:53:25 AM	11	15	17	26	5.7	12	23	34	17.75
17/10/12	11:53:35 AM	12	16	17	28	5.7	12	24	36	17.77
17/10/12	11:53:45 AM	12	16	17	28	5.6	12	24	36	17.78
17/10/12	11:53:55 AM	11	15	17	26	5.7	12	23	34	17.77
17/10/12	11:54:05 AM	12	16	17	28	5.8	12	24	37	17.80
17/10/12	11:54:15 AM	11	15	17	27	5.8	12	23	35	17.81
17/10/12	11:54:25 AM	11	15	17	27	5.9	12	23	35	17.81
17/10/12	11:54:35 AM	11	15	17	27	5.8	12	23	35	17.79
17/10/12	11:54:45 AM	11	15	17	27	6.0	12	23	35	17.82
17/10/12	11:54:55 AM	11	15	18	27	6.1	13	23	35	17.76
17/10/12	11:55:05 AM	12	16	18	28	5.9	12	24	37	17.74
17/10/12	11:55:15 AM	11	15	17	27	6.0	12	23	35	17.74
17/10/12	11:55:25 AM	12	16	17	28	5.9	12	24	37	17.72
17/10/12	11:55:35 AM	11	15	17	27	5.9	12	23	35	17.77
17/10/12	11:55:45 AM	11	15	17	26	5.7	12	23	34	17.77
17/10/12	11:55:55 AM	11	15	17	27	5.8	12	23	35	17.77
17/10/12	11:56:05 AM	11	15	17	27	5.9	12	23	35	17.80
17/10/12	11:56:15 AM	11	15	17	27	5.9	12	23	35	17.78
17/10/12	11:56:25 AM	11	15	17	27	6.0	12	23	35	17.79
17/10/12	11:56:35 AM	11	15	17	27	6.0	12	23	35	17.77
17/10/12	11:56:45 AM	11	15	17	27	5.9	12	23	35	17.78
17/10/12	11:56:55 AM	11	15	17	27	5.8	12	23	35	17.76
17/10/12	11:57:05 AM	11	15	17	27	5.8	12	23	35	17.77
17/10/12	11:57:15 AM	11	15	17	27	5.9	12	23	35	17.76
17/10/12	11:57:25 AM	11	15	17	27	5.9	12	23	35	17.75
17/10/12	11:57:35 AM	11	15	17	27	5.8	12	23	35	17.79
17/10/12	11:57:45 AM	11	15	17	27	5.9	12	23	35	17.80
17/10/12	11:57:55 AM	11	15	17	27	6.0	12	23	35	17.80
17/10/12	11:58:05 AM	11	15	17	27	6.2	13	23	35	17.78
17/10/12	11:58:15 AM	11	15	17	27	6.1	13	23	35	17.76
17/10/12	11:58:25 AM	11	15	17	27	6.1	13	23	35	17.75
17/10/12	11:58:35 AM	11	15	17	27	6.0	12	23	35	17.75
17/10/12	11:58:45 AM	11	15	17	27	6.0	12	23	35	17.76
17/10/12	11:58:55 AM	12	16	18	28	6.0	12	24	37	17.77
17/10/12	11:59:05 AM	11	15	17	27	6.1	13	23	35	17.78
17/10/12	11:59:15 AM	11	15	17	27	6.1	13	23	35	17.75
17/10/12	11:59:25 AM	11	15	17	27	6.1	13	23	35	17.74
17/10/12	11:59:35 AM	11	15	17	27	6.1	13	23	35	17.78
17/10/12	11:59:45 AM	11	15	17	27	6.2	13	23	35	17.79
17/10/12	11:59:55 AM	11	15	17	28	6.3	13	23	36	17.79
17/10/12	12:00:05 PM	11	15	17	27	6.1	13	23	35	17.80
17/10/12	12:00:15 PM	11	15	17	27	6.1	13	23	35	17.76
17/10/12	12:00:25 PM	11	15	17	27	6.2	13	23	35	17.77
17/10/12	12:00:35 PM	11	15	17	27	6.1	13	23	35	17.80
17/10/12	12:00:45 PM	11	15	17	27	6.1	13	23	35	17.79
17/10/12	12:00:55 PM	11	15	17	27	6.2	13	23	35	17.75
17/10/12	12:01:05 PM	11	15	18	28	6.3	13	23	36	17.75
17/10/12	12:01:15 PM	11	15	17	27	6.2	13	23	35	17.79
17/10/12	12:01:25 PM	11	15	17	28	6.4	13	23	36	17.79
17/10/12	12:01:35 PM	11	15	17	28	6.3	13	23	36	17.81
17/10/12	12:01:45 PM	11	15	17	27	6.1	13	23	35	17.81
17/10/12	12:01:55 PM	11	15	17	27	6.1	13	23	35	17.81
17/10/12	12:02:05 PM	11	15	17	27	6.1	13	23	35	17.80
17/10/12	12:02:15 PM	11	15	17	27	6.1	13	23	35	17.81
17/10/12	12:02:25 PM	11	15	17	27	6.2	13	23	35	17.78
17/10/12	12:02:35 PM	11	15	17	28	6.3	13	23	36	17.80
17/10/12	12:02:45 PM	11	15	17	27	6.2	13	23	35	17.76
17/10/12	12:02:55 PM	11	15	17	27	6.1	13	23	35	17.79
17/10/12	12:03:05 PM	11	15	17	28	6.3	13	23	36	17.77
17/10/12	12:03:15 PM	11	15	17	28	6.3	13	23	36	17.77
17/10/12	12:03:25 PM	11	15	17	27	6.2	13	23	35	17.77
17/10/12	12:03:35 PM	11	15	17	27	6.2	13	23	35	17.77
17/10/12	12:03:45 PM	11	15	17	28	6.3	13	23	36	17.75
17/10/12	12:03:55 PM	11	15	17	28	6.3	13	23	36	17.76
17/10/12	12:04:05 PM	11	15	17	28	6.3	13	23	36	17.78
17/10/12	12:04:15 PM	11	15	17	28	6.3	13	23	36	17.81
17/10/12	12:04:25 PM	11	15	17	28	6.3	13	23	36	17.82
17/10/12	12:04:35 PM	11	15	17	28	6.3	13	23	36	17.83
17/10/12	12:04:45 PM	11	15	17	28	6.5	13	23	36	17.80
17/10/12	12:04:55 PM	11	15	17	28	6.4	13	23	36	17.76
17/10/12	12:05:05 PM	11	15	17	28	6.4	13	23	36	17.74
17/10/12	12:05:15 PM	11	15	17	28	6.3	13	23	36	17.75
17/10/12	12:05:25 PM	11	15	17	28	6.3	13	23	36	17.77
17/10/12	12:05:35 PM	11	15	17	27	6.2	13	23	35	17.77
17/10/12	12:05:45 PM	11	15	17	28	6.3	13	23	36	17.79
17/10/12	12:05:55 PM	10	13	17	26	6.3	13	22	33	17.78

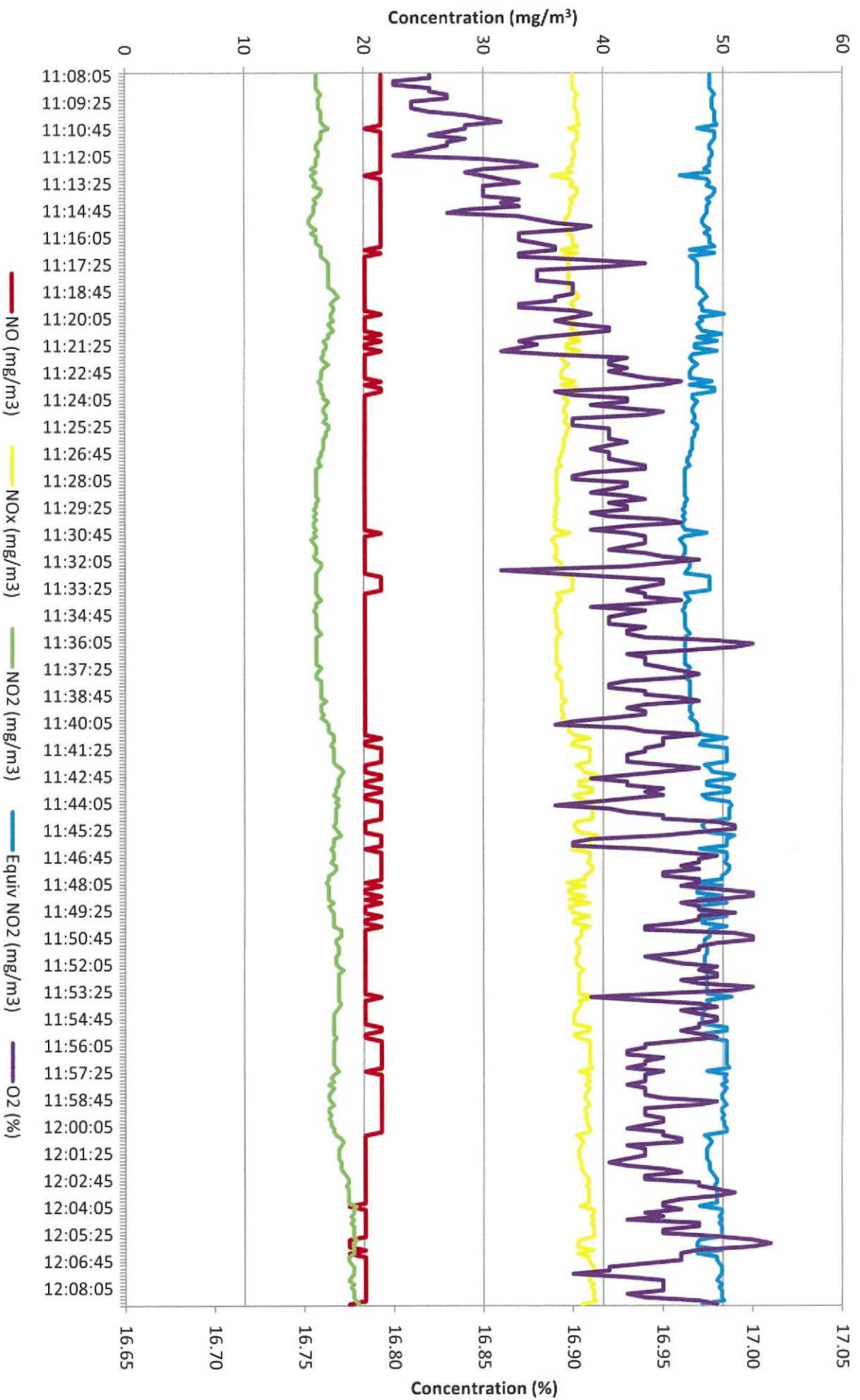
Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	12:06:05 PM	11	15	17	28	6.3	13	23	36	17.78
17/10/12	12:06:15 PM	11	15	17	28	6.3	13	23	36	17.78
17/10/12	12:06:25 PM	10	13	17	27	6.5	13	22	34	17.80
17/10/12	12:06:35 PM	10	13	17	27	6.4	13	22	34	17.81
17/10/12	12:06:45 PM	10	13	17	27	6.4	13	22	34	17.77
17/10/12	12:06:55 PM	11	15	17	28	6.3	13	23	36	17.76
17/10/12	12:07:05 PM	11	15	17	28	6.4	13	23	36	17.73
17/10/12	12:07:15 PM	11	15	17	27	6.2	13	23	35	17.76
17/10/12	12:07:25 PM	11	15	17	27	6.2	13	23	35	17.79
17/10/12	12:07:35 PM	11	15	17	28	6.3	13	23	36	17.79
17/10/12	12:07:45 PM	11	15	17	28	6.3	13	23	36	17.76
17/10/12	12:07:55 PM	11	15	17	28	6.3	13	23	36	17.73
17/10/12	12:08:05 PM	10	13	17	27	6.5	13	22	34	17.74
17/10/12	12:08:15 PM	11	15	17	28	6.4	13	23	36	17.76
17/10/12	12:08:25 PM	10	13	17	26	6.3	13	22	33	17.78
17/10/12	12:08:35 PM	11	15	17	28	6.3	13	23	36	17.76
17/10/12	12:08:45 PM	11	15	17	28	6.3	13	23	36	17.76
17/10/12	12:08:55 PM	11	15	17	28	6.3	13	23	36	17.79
17/10/12	12:09:05 PM	10	13	17	26	6.2	13	22	33	17.81
17/10/12	12:09:15 PM	10	13	17	27	6.4	13	22	34	17.81
17/10/12	12:09:25 PM	10	13	17	27	6.5	13	22	34	17.80
17/10/12	12:09:35 PM	10	13	17	27	6.5	13	22	34	17.80
17/10/12	12:09:45 PM	10	13	17	27	6.6	14	22	34	17.82
17/10/12	12:09:55 PM	10	13	17	27	6.6	14	22	34	17.79
17/10/12	12:10:05 PM	10	13	17	27	6.6	14	22	34	17.78
17/10/12	12:10:15 PM	10	13	17	27	6.5	13	22	34	17.74
17/10/12	12:10:25 PM	10	13	17	27	6.5	13	22	34	17.75
17/10/12	12:10:35 PM	10	13	17	27	6.4	13	22	34	17.80
17/10/12	12:10:45 PM	10	13	17	27	6.4	13	22	34	17.80
17/10/12	12:10:55 PM	10	13	17	27	6.5	13	22	34	17.75
17/10/12	12:11:05 PM	10	13	17	27	6.5	13	22	34	17.75
17/10/12	12:11:15 PM	10	13	17	27	6.5	13	22	34	17.78
17/10/12	12:11:25 PM	10	13	17	27	6.6	14	22	34	17.81
17/10/12	12:11:35 PM	10	13	17	27	6.7	14	22	34	17.80
17/10/12	12:11:45 PM	10	13	17	27	6.5	13	22	34	17.76
17/10/12	12:11:55 PM	10	13	17	27	6.5	13	22	34	17.80
17/10/12	12:12:05 PM	10	13	17	27	6.5	13	22	34	17.79
17/10/12	12:12:15 PM	10	13	17	27	6.5	13	22	34	17.81
17/10/12	12:12:25 PM	10	13	17	27	6.4	13	22	34	17.84
17/10/12	12:12:35 PM	10	13	17	27	6.5	13	22	34	17.79
17/10/12	12:12:45 PM	10	13	17	27	6.6	14	22	34	17.79
17/10/12	12:12:55 PM	10	13	17	27	6.7	14	22	34	17.72
17/10/12	12:13:05 PM	10	13	17	27	6.8	14	22	35	17.75
17/10/12	12:13:15 PM	10	13	17	27	6.7	14	22	34	17.74
17/10/12	12:13:25 PM	10	13	17	27	6.5	13	22	34	17.77
17/10/12	12:13:35 PM	10	13	17	27	6.6	14	22	34	17.78
17/10/12	12:13:45 PM	10	13	16	27	6.5	13	22	34	17.82
17/10/12	12:13:55 PM	10	13	17	27	6.6	14	22	34	17.82
17/10/12	12:14:05 PM	10	13	17	27	6.6	14	22	34	17.82
17/10/12	12:14:15 PM	10	13	17	27	6.6	14	22	34	17.83
17/10/12	12:14:25 PM	10	13	17	27	6.6	14	22	34	17.82
17/10/12	12:14:35 PM	10	13	17	27	6.7	14	22	34	17.79
17/10/12	12:14:45 PM	10	13	17	27	6.8	14	22	35	17.80
17/10/12	12:14:55 PM	10	13	17	27	6.8	14	22	35	17.78
17/10/12	12:15:05 PM	10	13	17	27	6.7	14	22	34	17.79
17/10/12	12:15:15 PM	10	13	17	27	6.7	14	22	34	17.79
17/10/12	12:15:25 PM	10	13	17	27	6.8	14	22	35	17.78
17/10/12	12:15:35 PM	10	13	17	27	6.8	14	22	35	17.77
17/10/12	12:15:45 PM	10	13	17	27	6.8	14	22	35	17.79
17/10/12	12:15:55 PM	10	13	17	27	6.8	14	22	35	17.79
17/10/12	12:16:05 PM	10	13	17	28	6.9	14	22	35	17.77
17/10/12	12:16:15 PM	10	13	17	28	6.9	14	22	35	17.76
17/10/12	12:16:25 PM	10	13	17	28	6.9	14	22	35	17.79
17/10/12	12:16:35 PM	10	13	17	27	6.8	14	22	35	17.76
17/10/12	12:16:45 PM	11	15	17	29	6.9	14	24	37	17.74
17/10/12	12:16:55 PM	10	13	17	27	6.8	14	22	35	17.79
17/10/12	12:17:05 PM	10	13	17	27	6.7	14	22	34	17.82
17/10/12	12:17:15 PM	10	13	17	27	6.7	14	22	34	17.83
17/10/12	12:17:25 PM	10	13	17	27	6.7	14	22	34	17.83
17/10/12	12:17:35 PM	10	13	17	27	6.8	14	22	35	17.78
17/10/12	12:17:45 PM	10	13	17	27	6.7	14	22	34	17.79
17/10/12	12:17:55 PM	10	13	17	27	6.7	14	22	34	17.80
17/10/12	12:18:05 PM	10	13	17	28	6.9	14	22	35	17.82
17/10/12	12:18:15 PM	10	13	17	28	6.9	14	22	35	17.80
17/10/12	12:18:25 PM	10	13	17	27	6.7	14	22	34	17.79
17/10/12	12:18:35 PM	10	13	17	27	6.8	14	22	35	17.77
17/10/12	12:18:45 PM	10	13	17	27	6.7	14	22	34	17.75
17/10/12	12:18:55 PM	11	15	17	29	6.8	14	24	37	17.69
17/10/12	12:19:05 PM	11	15	17	28	6.7	14	24	36	17.72
17/10/12	12:19:15 PM	11	15	17	28	6.7	14	24	36	17.73
17/10/12	12:19:25 PM	10	13	17	27	6.7	14	22	34	17.75
17/10/12	12:19:35 PM	10	13	17	27	6.7	14	22	34	17.72
17/10/12	12:19:45 PM	10	13	17	27	6.8	14	22	35	17.73
17/10/12	12:19:55 PM	10	13	17	27	6.8	14	22	35	17.70

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	12:20:05 PM	10	13	17	27	6.7	14	22	34	17.74
17/10/12	12:20:15 PM	10	13	17	27	6.7	14	22	34	17.72
17/10/12	12:20:25 PM	10	13	17	27	6.7	14	22	34	17.77
17/10/12	12:20:35 PM	10	13	17	27	6.5	13	22	34	17.78
17/10/12	12:20:45 PM	10	13	17	27	6.7	14	22	34	17.76
17/10/12	12:20:55 PM	11	15	17	28	6.4	13	23	36	17.76
17/10/12	12:21:05 PM	11	15	17	26	5.4	11	22	34	17.75
17/10/12	12:21:15 PM	12	16	17	27	5.3	11	24	36	17.72
17/10/12	12:21:25 PM	11	15	17	26	5.4	11	22	34	17.72
17/10/12	12:21:35 PM	11	15	17	25	5.2	11	22	33	17.76
17/10/12	12:21:45 PM	12	16	17	27	5.3	11	24	36	17.71
17/10/12	12:21:55 PM	12	16	17	27	5.3	11	24	36	17.72
17/10/12	12:22:05 PM	11	15	17	25	5.2	11	22	33	17.73
17/10/12	12:22:15 PM	11	15	16	26	5.3	11	22	33	17.73
17/10/12	12:22:25 PM	11	15	17	26	5.4	11	22	34	17.72
17/10/12	12:22:35 PM	11	15	16	26	5.4	11	22	34	17.73
17/10/12	12:22:45 PM	11	15	16	26	5.3	11	22	33	17.74
17/10/12	12:22:55 PM	11	15	16	26	5.4	11	22	34	17.73
17/10/12	12:23:05 PM	11	15	16	26	5.4	11	22	34	17.73
17/10/12	12:23:15 PM	11	15	16	26	5.4	11	22	34	17.74
17/10/12	12:23:25 PM	11	15	16	25	5.2	11	22	33	17.75
17/10/12	12:23:35 PM	11	15	16	25	5.2	11	22	33	17.80
17/10/12	12:23:45 PM	11	15	16	26	5.3	11	22	33	17.75
17/10/12	12:23:55 PM	11	15	16	26	5.4	11	22	34	17.72
17/10/12	12:24:05 PM	11	15	17	26	5.4	11	22	34	17.73
17/10/12	12:24:15 PM	11	15	16	26	5.4	11	22	34	17.76
17/10/12	12:24:25 PM	11	15	16	26	5.4	11	22	34	17.75
17/10/12	12:24:35 PM	11	15	16	26	5.4	11	22	34	17.73
17/10/12	12:24:45 PM	11	15	16	26	5.5	11	22	34	17.75
17/10/12	12:24:55 PM	11	15	16	26	5.4	11	22	34	17.77
17/10/12	12:25:05 PM	11	15	16	26	5.3	11	22	33	17.77
17/10/12	12:25:15 PM	11	15	16	26	5.3	11	22	33	17.75
17/10/12	12:25:25 PM	11	15	17	25	5.1	10	22	33	17.72
17/10/12	12:25:35 PM	11	15	16	25	5.0	10	22	33	17.75
17/10/12	12:25:45 PM	11	15	16	25	5.2	11	22	33	17.74
17/10/12	12:25:55 PM	11	15	16	25	5.1	10	22	33	17.74
17/10/12	12:26:05 PM	11	15	16	25	5.2	11	22	33	17.75
17/10/12	12:26:15 PM	11	15	16	26	5.3	11	22	33	17.74
17/10/12	12:26:25 PM	11	15	16	26	5.4	11	22	34	17.76
17/10/12	12:26:35 PM	11	15	16	26	5.5	11	22	34	17.76
17/10/12	12:26:45 PM	11	15	16	26	5.4	11	22	34	17.75
17/10/12	12:26:55 PM	11	15	16	26	5.4	11	22	34	17.75
17/10/12	12:27:05 PM	11	15	16	26	5.5	11	22	34	17.72
17/10/12	12:27:15 PM	11	15	17	26	5.4	11	22	34	17.71
17/10/12	12:27:25 PM	11	15	16	26	5.3	11	22	33	17.72
17/10/12	12:27:35 PM	11	15	16	25	5.2	11	22	33	17.74
17/10/12	12:27:45 PM	11	15	16	25	5.2	11	22	33	17.77
17/10/12	12:27:55 PM	11	15	16	26	5.3	11	22	33	17.75
17/10/12	12:28:05 PM	11	15	16	26	5.5	11	22	34	17.72
17/10/12	12:28:15 PM	11	15	16	26	5.5	11	22	34	17.72
17/10/12	12:28:25 PM	11	15	16	26	5.4	11	22	34	17.74
17/10/12	12:28:35 PM	11	15	16	26	5.5	11	22	34	17.72
17/10/12	12:28:45 PM	11	15	16	26	5.5	11	22	34	17.75
17/10/12	12:28:55 PM	11	15	16	26	5.5	11	22	34	17.79
17/10/12	12:29:05 PM	11	15	16	26	5.6	12	22	34	17.80
17/10/12	12:29:15 PM	11	15	16	26	5.7	12	23	34	17.78
17/10/12	12:29:25 PM	11	15	16	26	5.7	12	23	34	17.76
17/10/12	12:29:35 PM	11	15	16	26	5.6	12	22	34	17.76
17/10/12	12:29:45 PM	11	15	17	27	5.9	12	23	35	17.71
17/10/12	12:29:55 PM	11	15	16	27	5.8	12	23	35	17.75
17/10/12	12:30:05 PM	11	15	16	26	5.7	12	23	34	17.76
17/10/12	12:30:15 PM	11	15	16	26	5.6	12	22	34	17.76
17/10/12	12:30:25 PM	11	15	16	26	5.7	12	23	34	17.73
17/10/12	12:30:35 PM	11	15	16	26	5.7	12	23	34	17.77
17/10/12	12:30:45 PM	10	13	16	24	5.4	11	21	32	17.82
17/10/12	12:30:55 PM	11	15	16	26	5.4	11	22	34	17.81
17/10/12	12:31:05 PM	10	13	16	25	5.5	11	21	32	17.78
17/10/12	12:31:15 PM	10	13	16	24	5.4	11	21	32	17.79
17/10/12	12:31:25 PM	10	13	16	25	5.6	12	21	32	17.80
17/10/12	12:31:35 PM	10	13	16	25	5.6	12	21	32	17.82
17/10/12	12:31:45 PM	10	13	16	25	5.7	12	21	32	17.79
17/10/12	12:31:55 PM	10	13	16	26	5.9	12	21	33	17.78
17/10/12	12:32:05 PM	10	13	16	25	5.8	12	21	32	17.79
17/10/12	12:32:15 PM	10	13	16	26	5.9	12	21	33	17.80
17/10/12	12:32:25 PM	10	13	16	26	5.9	12	21	33	17.80
17/10/12	12:32:35 PM	10	13	16	26	6.0	12	21	33	17.78
17/10/12	12:32:45 PM	10	13	16	26	5.9	12	21	33	17.83
17/10/12	12:32:55 PM	10	13	16	26	6.0	12	21	33	17.81
17/10/12	12:33:05 PM	10	13	16	26	6.1	13	21	33	17.83
17/10/12	12:33:15 PM	10	13	16	26	6.1	13	21	33	17.78
17/10/12	12:33:25 PM	10	13	16	26	6.0	12	21	33	17.75
17/10/12	12:33:35 PM	10	13	16	25	5.8	12	21	32	17.77
17/10/12	12:33:45 PM	10	13	16	25	5.8	12	21	32	17.80
17/10/12	12:33:55 PM	10	13	16	25	5.7	12	21	32	17.82

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	12:34:05 PM	10	13	16	26	5.9	12	21	33	17.84
17/10/12	12:34:15 PM	10	13	16	25	5.8	12	21	32	17.84
17/10/12	12:34:25 PM	10	13	16	25	5.7	12	21	32	17.81
17/10/12	12:34:35 PM	10	13	16	25	5.7	12	21	32	17.82
17/10/12	12:34:45 PM	10	13	16	26	5.9	12	21	33	17.80
17/10/12	12:34:55 PM	10	13	16	26	5.9	12	21	33	17.79
17/10/12	12:35:05 PM	10	13	16	25	5.8	12	21	32	17.78
17/10/12	12:35:15 PM	10	13	16	26	5.9	12	21	33	17.76
17/10/12	12:35:25 PM	10	13	16	25	5.8	12	21	32	17.77
17/10/12	12:35:35 PM	10	13	16	25	5.8	12	21	32	17.77
17/10/12	12:35:45 PM	10	13	16	26	5.9	12	21	33	17.72
17/10/12	12:35:55 PM	10	13	16	26	5.9	12	21	33	17.73
17/10/12	12:36:05 PM	10	13	16	25	5.8	12	21	32	17.73
17/10/12	12:36:15 PM	10	13	16	25	5.7	12	21	32	17.76
17/10/12	12:36:25 PM	10	13	16	26	6.0	12	21	33	17.78
17/10/12	12:36:35 PM	10	13	16	26	6.0	12	21	33	17.80
17/10/12	12:36:45 PM	10	13	16	25	5.8	12	21	32	17.77
17/10/12	12:36:55 PM	10	13	16	25	5.8	12	21	32	17.82
17/10/12	12:37:05 PM	10	13	16	25	5.8	12	21	32	17.80
17/10/12	12:37:15 PM	10	13	16	25	5.7	12	21	32	17.79
17/10/12	12:37:25 PM	10	13	16	25	5.7	12	21	32	17.82
17/10/12	12:37:35 PM	10	13	16	25	5.8	12	21	32	17.81
17/10/12	12:37:45 PM	10	13	16	26	5.9	12	21	33	17.78
17/10/12	12:37:55 PM	10	13	16	26	5.9	12	21	33	17.77
17/10/12	12:38:05 PM	10	13	16	26	6.0	12	21	33	17.77
17/10/12	12:38:15 PM	10	13	16	26	5.9	12	21	33	17.75
17/10/12	12:38:25 PM	10	13	15	25	5.7	12	21	32	17.81
17/10/12	12:38:35 PM	10	13	16	25	5.7	12	21	32	17.80
17/10/12	12:38:45 PM	10	13	16	25	5.6	12	21	32	17.78
17/10/12	12:38:55 PM	11	15	16	26	5.6	12	22	34	17.74
17/10/12	12:39:05 PM	10	13	16	25	5.5	11	21	32	17.77
17/10/12	12:39:15 PM	10	13	16	25	5.5	11	21	32	17.73
17/10/12	12:39:25 PM	10	13	16	25	5.7	12	21	32	17.72
17/10/12	12:39:35 PM	10	13	16	25	5.8	12	21	32	17.72
17/10/12	12:39:45 PM	10	13	16	26	6.0	12	21	33	17.71
17/10/12	12:39:55 PM	10	13	16	26	5.9	12	21	33	17.76
17/10/12	12:40:05 PM	10	13	16	25	5.7	12	21	32	17.79
17/10/12	12:40:15 PM	10	13	16	25	5.6	12	21	32	17.81
17/10/12	12:40:25 PM	10	13	16	25	5.7	12	21	32	17.80
17/10/12	12:40:35 PM	10	13	15	25	5.7	12	21	32	17.83
17/10/12	12:40:45 PM	10	13	16	25	5.7	12	21	32	17.80
17/10/12	12:40:55 PM	10	13	16	25	5.7	12	21	32	17.81
17/10/12	12:41:05 PM	10	13	16	26	5.9	12	21	33	17.76
17/10/12	12:41:15 PM	10	13	16	26	5.9	12	21	33	17.80
17/10/12	12:41:25 PM	10	13	16	26	6.2	13	22	33	17.83
17/10/12	12:41:35 PM	9	12	16	25	6.1	13	20	31	17.84
17/10/12	12:41:45 PM	10	13	16	26	6.2	13	22	33	17.79
17/10/12	12:41:55 PM	10	13	16	26	6.3	13	22	33	17.73
17/10/12	12:42:05 PM	10	13	16	26	6.3	13	22	33	17.76
17/10/12	12:42:15 PM	10	13	16	26	6.2	13	22	33	17.77
17/10/12	12:42:25 PM	10	13	16	26	6.1	13	21	33	17.80
17/10/12	12:42:35 PM	10	13	16	26	6.2	13	22	33	17.83
17/10/12	12:42:45 PM	10	13	16	26	6.1	13	21	33	17.83
17/10/12	12:42:55 PM	10	13	16	26	6.1	13	21	33	17.84
17/10/12	12:43:05 PM	10	13	16	26	6.2	13	22	33	17.82
17/10/12	12:43:15 PM	10	13	16	26	6.2	13	22	33	17.76
17/10/12	12:43:25 PM	10	13	16	26	6.0	12	21	33	17.80
17/10/12	12:43:35 PM	10	13	16	26	6.0	12	21	33	17.83
17/10/12	12:43:45 PM	10	13	16	25	5.8	12	21	32	17.84
17/10/12	12:43:55 PM	10	13	16	25	5.8	12	21	32	17.81
17/10/12	12:44:05 PM	10	13	16	26	5.9	12	21	33	17.82
17/10/12	12:44:15 PM	10	13	16	25	5.8	12	21	32	17.82
17/10/12	12:44:25 PM	10	13	16	26	6.0	12	21	33	17.79
17/10/12	12:44:35 PM	10	13	16	26	6.1	13	21	33	17.76
17/10/12	12:44:45 PM	10	13	16	26	6.2	13	22	33	17.77
17/10/12	12:44:55 PM	10	13	16	26	6.1	13	21	33	17.78
17/10/12	12:45:05 PM	10	13	16	26	5.9	12	21	33	17.80
17/10/12	12:45:15 PM	10	13	16	26	6.1	13	21	33	17.77
17/10/12	12:45:25 PM	10	13	16	26	6.2	13	22	33	17.74
17/10/12	12:45:35 PM	10	13	16	26	6.1	13	21	33	17.78
17/10/12	12:45:45 PM	10	13	16	26	6.1	13	21	33	17.84
17/10/12	12:45:55 PM	10	13	16	26	6.0	12	21	33	17.82
17/10/12	12:46:05 PM	10	13	16	26	6.0	12	21	33	17.79
17/10/12	12:46:15 PM	10	13	16	26	5.9	12	21	33	17.80
17/10/12	12:46:25 PM	10	13	16	26	6.1	13	21	33	17.82
17/10/12	12:46:35 PM	10	13	16	26	6.0	12	21	33	17.84
17/10/12	12:46:45 PM	10	13	16	26	6.0	12	21	33	17.81
17/10/12	12:46:55 PM	10	13	16	26	6.1	13	21	33	17.79
17/10/12	12:47:05 PM	10	13	16	26	6.1	13	21	33	17.82
17/10/12	12:47:15 PM	10	13	16	26	5.9	12	21	33	17.80
17/10/12	12:47:25 PM	10	13	16	26	6.1	13	21	33	17.75
17/10/12	12:47:35 PM	10	13	16	26	6.0	12	21	33	17.75
17/10/12	12:47:45 PM	10	13	16	26	6.0	12	21	33	17.74
17/10/12	12:47:55 PM	10	13	16	26	5.9	12	21	33	17.79

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
17/10/12	12:48:05 PM	10	13	16	26	6.1	13	21	33	17.79
17/10/12	12:48:15 PM	10	13	16	26	6.0	12	21	33	17.74
17/10/12	12:48:25 PM	10	13	16	25	5.8	12	21	32	17.75
17/10/12	12:48:35 PM	10	13	16	25	5.7	12	21	32	17.77
17/10/12	12:48:45 PM	10	13	16	25	5.7	12	21	32	17.77
17/10/12	12:48:55 PM	10	13	16	25	5.7	12	21	32	17.78
17/10/12	12:49:05 PM	10	13	16	25	5.8	12	21	32	17.76
17/10/12	12:49:15 PM	10	13	16	26	5.9	12	21	33	17.76
17/10/12	12:49:25 PM	10	13	16	26	6.0	12	21	33	17.79
17/10/12	12:49:35 PM	10	13	16	26	6.0	12	21	33	17.80
17/10/12	12:49:45 PM	10	13	16	26	6.3	13	22	33	17.77
17/10/12	12:49:55 PM	10	13	16	26	6.2	13	22	33	17.79
17/10/12	12:50:05 PM	10	13	16	26	6.3	13	22	33	17.73
17/10/12	12:50:15 PM	10	13	16	26	6.3	13	22	33	17.76
17/10/12	12:50:25 PM	10	13	16	26	6.3	13	22	33	17.76
17/10/12	12:50:35 PM	10	13	16	26	6.3	13	22	33	17.77
17/10/12	12:50:45 PM	10	13	16	26	6.2	13	22	33	17.78
17/10/12	12:50:55 PM	10	13	16	26	6.2	13	22	33	17.78
17/10/12	12:51:05 PM	10	13	16	26	6.2	13	22	33	17.81
17/10/12	12:51:15 PM	10	13	16	26	6.2	13	22	33	17.85
17/10/12	12:51:25 PM	10	13	16	27	6.4	13	22	34	17.79
17/10/12	12:51:35 PM	10	13	16	26	6.3	13	22	33	17.79
17/10/12	12:51:45 PM	10	13	16	26	6.1	13	21	33	17.73
17/10/12	12:51:55 PM	10	13	16	26	6.2	13	22	33	17.77
17/10/12	12:52:05 PM	10	13	16	26	6.0	12	21	33	17.77
17/10/12	12:52:15 PM	10	13	16	26	6.0	12	21	33	17.75
17/10/12	12:52:25 PM	10	13	16	26	6.1	13	21	33	17.75
17/10/12	12:52:35 PM	10	13	16	26	6.1	13	21	33	17.75
17/10/12	12:52:45 PM	10	13	16	26	6.1	13	21	33	17.78
17/10/12	12:52:55 PM	10	13	16	26	6.1	13	21	33	17.80
17/10/12	12:53:05 PM	10	13	16	26	6.3	13	22	33	17.81
17/10/12	12:53:15 PM	10	13	16	26	6.0	12	21	33	17.75
17/10/12	12:53:25 PM	10	13	15	25	5.7	12	21	32	17.84
17/10/12	12:53:35 PM	10	13	16	25	5.6	12	21	32	17.81
17/10/12	12:53:45 PM	10	13	16	25	5.7	12	21	32	17.82
17/10/12	12:53:55 PM	10	13	16	25	5.8	12	21	32	17.79
17/10/12	12:54:05 PM	10	13	16	25	5.8	12	21	32	17.79
17/10/12	12:54:15 PM	10	13	16	25	5.7	12	21	32	17.80
17/10/12	12:54:25 PM	10	13	16	25	5.6	12	21	32	17.78
17/10/12	12:54:35 PM	10	13	16	25	5.8	12	21	32	17.77
17/10/12	12:54:45 PM	10	13	16	26	6.1	13	21	33	17.77
17/10/12	12:54:55 PM	10	13	16	26	5.9	12	21	33	17.83
17/10/12	12:55:05 PM	10	13	16	26	5.9	12	21	33	17.81
17/10/12	12:55:15 PM	10	13	16	26	6.0	12	21	33	17.83
17/10/12	12:55:25 PM	10	13	16	26	6.1	13	21	33	17.82
17/10/12	12:55:35 PM	10	13	16	26	6.1	13	21	33	17.81
17/10/12	12:55:45 PM	10	13	16	26	6.3	13	22	33	17.78
17/10/12	12:55:55 PM	10	13	16	26	6.3	13	22	33	17.79
17/10/12	12:56:05 PM	10	13	16	26	6.3	13	22	33	17.75
17/10/12	12:56:15 PM	10	13	16	27	6.4	13	22	34	17.74
17/10/12	12:56:25 PM	10	13	16	27	6.5	13	22	34	17.77
17/10/12	12:56:35 PM	10	13	16	27	6.4	13	22	34	17.82
17/10/12	12:56:45 PM	10	13	16	26	6.3	13	22	33	17.78
17/10/12	12:56:55 PM	10	13	16	26	6.3	13	22	33	17.84
Average		11	15	17	27	5.7	11.8	23	35	17.8
Maximum		15	20	20	29	6.9	14.2	27	40	17.9
Minimum		9	12	15	24	4.0	8.2	20	31	17.7
Avg Corrected to 18% O ₂		11	14	16	25	5.3	10.9	21	33	NA

60274108 Kiln 2 Oxides of Nitrogen and Oxygen Data Plot, 16 October 2012



Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
16/10/12	11:08:05	16	21	24	37	7.8	16	32	49	16.82
16/10/12	11:08:15	16	21	24	37	7.8	16	32	49	16.82
16/10/12	11:08:25	16	21	24	37	7.8	16	32	49	16.80
16/10/12	11:08:35	16	21	24	37	7.8	16	32	49	16.80
16/10/12	11:08:45	16	21	24	37	7.8	16	32	49	16.82
16/10/12	11:08:55	16	21	23	38	7.9	16	32	49	16.82
16/10/12	11:09:05	16	21	24	38	8.0	16	33	49	16.83
16/10/12	11:09:15	16	21	24	38	7.9	16	32	49	16.83
16/10/12	11:09:25	16	21	24	38	7.9	16	32	49	16.81
16/10/12	11:09:35	16	21	24	38	7.9	16	32	49	16.81
16/10/12	11:09:45	16	21	24	38	7.9	16	32	49	16.81
16/10/12	11:09:55	16	21	24	38	8.0	16	33	49	16.82
16/10/12	11:10:05	16	21	24	38	8.0	16	33	49	16.84
16/10/12	11:10:15	16	21	24	38	8.0	16	33	49	16.85
16/10/12	11:10:25	16	21	24	38	8.0	16	33	49	16.86
16/10/12	11:10:35	16	21	24	38	8.1	17	33	49	16.84
16/10/12	11:10:45	15	20	24	37	8.3	17	31	48	16.84
16/10/12	11:10:55	16	21	24	38	8.0	16	33	49	16.83
16/10/12	11:11:05	16	21	24	38	8.0	16	33	49	16.82
16/10/12	11:11:15	16	21	24	38	8.0	16	33	49	16.84
16/10/12	11:11:25	16	21	24	38	7.9	16	32	49	16.83
16/10/12	11:11:35	16	21	24	37	7.8	16	32	49	16.83
16/10/12	11:11:45	16	21	24	37	7.8	16	32	49	16.82
16/10/12	11:11:55	16	21	24	38	7.9	16	32	49	16.81
16/10/12	11:12:05	16	21	24	38	7.9	16	32	49	16.80
16/10/12	11:12:15	16	21	24	37	7.8	16	32	49	16.85
16/10/12	11:12:25	16	21	24	37	7.8	16	32	49	16.87
16/10/12	11:12:35	16	21	24	37	7.8	16	32	49	16.88
16/10/12	11:12:45	16	21	24	37	7.6	16	32	48	16.85
16/10/12	11:12:55	16	21	24	37	7.8	16	32	49	16.84
16/10/12	11:13:05	15	20	23	36	7.6	16	31	46	16.85
16/10/12	11:13:15	16	21	23	37	7.7	16	32	49	16.86
16/10/12	11:13:25	16	21	24	37	7.8	16	32	49	16.87
16/10/12	11:13:35	16	21	23	37	7.7	16	32	49	16.85
16/10/12	11:13:45	16	21	24	38	8.0	16	33	49	16.85
16/10/12	11:13:55	16	21	24	38	8.0	16	33	49	16.85
16/10/12	11:14:05	16	21	24	38	7.9	16	32	49	16.85
16/10/12	11:14:15	16	21	23	37	7.7	16	32	49	16.87
16/10/12	11:14:25	16	21	23	37	7.8	16	32	49	16.86
16/10/12	11:14:35	16	21	23	37	7.7	16	32	49	16.87
16/10/12	11:14:45	16	21	24	37	7.7	16	32	49	16.84
16/10/12	11:14:55	16	21	24	37	7.7	16	32	49	16.83
16/10/12	11:15:05	16	21	24	37	7.6	16	32	48	16.87
16/10/12	11:15:15	16	21	23	37	7.5	15	32	48	16.88
16/10/12	11:15:25	16	21	24	37	7.5	15	32	48	16.89
16/10/12	11:15:35	16	21	23	37	7.6	16	32	48	16.91
16/10/12	11:15:45	16	21	24	37	7.8	16	32	49	16.90
16/10/12	11:15:55	16	21	24	37	7.6	16	32	48	16.87
16/10/12	11:16:05	16	21	23	37	7.8	16	32	49	16.87
16/10/12	11:16:15	16	21	23	37	7.8	16	32	49	16.87
16/10/12	11:16:25	16	21	23	37	7.8	16	32	49	16.88
16/10/12	11:16:35	16	21	24	38	8.0	16	33	49	16.89
16/10/12	11:16:45	15	20	23	37	8.0	16	31	47	16.89
16/10/12	11:16:55	16	21	24	38	8.0	16	33	49	16.87
16/10/12	11:17:05	15	20	24	37	8.0	16	31	47	16.87
16/10/12	11:17:15	15	20	23	37	8.2	17	31	48	16.91
16/10/12	11:17:25	15	20	23	37	8.3	17	31	48	16.94
16/10/12	11:17:35	15	20	23	37	8.3	17	31	48	16.92
16/10/12	11:17:45	15	20	24	37	8.3	17	31	48	16.88
16/10/12	11:17:55	15	20	23	37	8.3	17	31	48	16.88
16/10/12	11:18:05	15	20	24	37	8.3	17	31	48	16.88
16/10/12	11:18:15	15	20	24	37	8.3	17	31	48	16.88
16/10/12	11:18:25	15	20	24	37	8.3	17	31	48	16.90
16/10/12	11:18:35	15	20	24	37	8.3	17	31	48	16.90
16/10/12	11:18:45	15	20	24	38	8.5	17	32	48	16.90
16/10/12	11:18:55	15	20	24	38	8.6	18	32	48	16.90
16/10/12	11:19:05	15	20	24	38	8.7	18	32	49	16.89
16/10/12	11:19:15	15	20	24	38	8.5	17	32	48	16.89
16/10/12	11:19:25	15	20	23	37	8.4	17	31	48	16.87
16/10/12	11:19:35	15	20	24	38	8.5	17	32	48	16.87
16/10/12	11:19:45	15	20	24	38	8.5	17	32	48	16.90
16/10/12	11:19:55	16	21	24	39	8.4	17	33	50	16.91
16/10/12	11:20:05	15	20	24	37	8.4	17	31	48	16.90
16/10/12	11:20:15	15	20	24	38	8.5	17	32	48	16.89
16/10/12	11:20:25	15	20	24	37	8.3	17	31	48	16.90
16/10/12	11:20:35	15	20	24	37	8.4	17	31	48	16.92
16/10/12	11:20:45	15	20	24	38	8.5	17	32	48	16.92
16/10/12	11:20:55	16	21	24	38	8.3	17	33	50	16.90
16/10/12	11:21:05	15	20	24	37	8.3	17	31	48	16.88
16/10/12	11:21:15	16	21	24	38	8.1	17	33	49	16.87
16/10/12	11:21:25	15	20	24	37	8.2	17	31	48	16.88
16/10/12	11:21:35	15	20	24	37	8.2	17	31	48	16.87
16/10/12	11:21:45	16	21	24	38	8.1	17	33	49	16.86
16/10/12	11:21:55	15	20	23	37	8.1	17	31	47	16.89

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
16/10/12	11:22:05	15	20	23	37	8.0	16	31	47	16.93
16/10/12	11:22:15	15	20	23	37	8.1	17	31	47	16.92
16/10/12	11:22:25	15	20	24	37	8.3	17	31	48	16.92
16/10/12	11:22:35	15	20	24	37	8.1	17	31	47	16.93
16/10/12	11:22:45	15	20	23	37	8.0	16	31	47	16.92
16/10/12	11:22:55	15	20	23	37	8.0	16	31	47	16.93
16/10/12	11:23:05	15	20	23	37	8.0	16	31	47	16.94
16/10/12	11:23:15	16	21	23	38	7.9	16	32	49	16.96
16/10/12	11:23:25	15	20	23	37	8.0	16	31	47	16.95
16/10/12	11:23:35	16	21	23	38	8.0	16	33	49	16.93
16/10/12	11:23:45	16	21	24	38	8.0	16	33	49	16.89
16/10/12	11:23:55	15	20	24	37	8.1	17	31	47	16.90
16/10/12	11:24:05	15	20	23	37	8.1	17	31	47	16.93
16/10/12	11:24:15	15	20	24	37	8.3	17	31	48	16.93
16/10/12	11:24:25	15	20	23	37	8.2	17	31	48	16.91
16/10/12	11:24:35	15	20	23	37	8.1	17	31	47	16.93
16/10/12	11:24:45	15	20	23	37	8.1	17	31	47	16.95
16/10/12	11:24:55	15	20	23	37	8.2	17	31	48	16.94
16/10/12	11:25:05	15	20	24	37	8.2	17	31	48	16.90
16/10/12	11:25:15	15	20	23	37	8.1	17	31	47	16.90
16/10/12	11:25:25	15	20	24	37	8.3	17	31	48	16.90
16/10/12	11:25:35	15	20	24	37	8.3	17	31	48	16.92
16/10/12	11:25:45	15	20	23	37	8.2	17	31	48	16.92
16/10/12	11:25:55	15	20	24	37	8.2	17	31	48	16.92
16/10/12	11:26:05	15	20	23	37	8.1	17	31	47	16.92
16/10/12	11:26:15	15	20	23	37	8.1	17	31	47	16.93
16/10/12	11:26:25	15	20	23	37	8.1	17	31	47	16.92
16/10/12	11:26:35	15	20	23	37	8.1	17	31	47	16.91
16/10/12	11:26:45	15	20	23	37	8.0	16	31	47	16.92
16/10/12	11:26:55	15	20	23	37	8.0	16	31	47	16.92
16/10/12	11:27:05	15	20	23	36	7.9	16	31	47	16.92
16/10/12	11:27:15	15	20	23	36	7.9	16	31	47	16.93
16/10/12	11:27:25	15	20	23	37	8.0	16	31	47	16.94
16/10/12	11:27:35	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:27:45	15	20	23	36	7.8	16	31	47	16.91
16/10/12	11:27:55	15	20	23	36	7.8	16	31	47	16.90
16/10/12	11:28:05	15	20	23	36	7.8	16	31	47	16.90
16/10/12	11:28:15	15	20	23	36	7.8	16	31	47	16.93
16/10/12	11:28:25	15	20	23	36	7.8	16	31	47	16.93
16/10/12	11:28:35	15	20	23	36	7.8	16	31	47	16.92
16/10/12	11:28:45	15	20	23	36	7.8	16	31	47	16.91
16/10/12	11:28:55	15	20	23	36	7.8	16	31	47	16.93
16/10/12	11:29:05	15	20	23	36	7.9	16	31	47	16.94
16/10/12	11:29:15	15	20	23	36	7.8	16	31	47	16.92
16/10/12	11:29:25	15	20	23	36	7.8	16	31	47	16.93
16/10/12	11:29:35	15	20	23	36	7.7	16	31	47	16.93
16/10/12	11:29:45	15	20	23	36	7.8	16	31	47	16.91
16/10/12	11:29:55	15	20	23	36	7.7	16	31	47	16.92
16/10/12	11:30:05	15	20	23	36	7.8	16	31	47	16.95
16/10/12	11:30:15	15	20	23	36	7.7	16	31	47	16.96
16/10/12	11:30:25	15	20	23	36	7.7	16	31	47	16.93
16/10/12	11:30:35	15	20	23	36	7.8	16	31	47	16.91
16/10/12	11:30:45	16	21	23	37	7.7	16	32	49	16.93
16/10/12	11:30:55	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:31:05	15	20	23	36	7.6	16	31	46	16.94
16/10/12	11:31:15	15	20	23	36	7.7	16	31	47	16.94
16/10/12	11:31:25	15	20	23	36	7.8	16	31	47	16.93
16/10/12	11:31:35	15	20	23	36	7.8	16	31	47	16.92
16/10/12	11:31:45	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:31:55	15	20	23	36	7.7	16	31	47	16.95
16/10/12	11:32:05	15	20	23	36	7.8	16	31	47	16.97
16/10/12	11:32:15	15	20	23	37	8.0	16	31	47	16.95
16/10/12	11:32:25	15	20	23	37	8.0	16	31	47	16.93
16/10/12	11:32:35	15	20	23	36	7.9	16	31	47	16.86
16/10/12	11:32:45	15	20	23	36	7.8	16	31	47	16.89
16/10/12	11:32:55	16	21	23	37	7.8	16	32	49	16.92
16/10/12	11:33:05	16	21	23	37	7.8	16	32	49	16.95
16/10/12	11:33:15	16	21	23	37	7.8	16	32	49	16.95
16/10/12	11:33:25	16	21	23	37	7.8	16	32	49	16.94
16/10/12	11:33:35	16	21	23	37	7.8	16	32	49	16.93
16/10/12	11:33:45	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:33:55	15	20	23	36	7.9	16	31	47	16.94
16/10/12	11:34:05	15	20	23	37	8.0	16	31	47	16.96
16/10/12	11:34:15	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:34:25	15	20	23	36	7.8	16	31	47	16.91
16/10/12	11:34:35	15	20	23	36	7.7	16	31	47	16.94
16/10/12	11:34:45	15	20	23	36	7.8	16	31	47	16.93
16/10/12	11:34:55	15	20	23	36	7.8	16	31	47	16.92
16/10/12	11:35:05	15	20	23	36	7.8	16	31	47	16.92
16/10/12	11:35:15	15	20	23	36	7.8	16	31	47	16.92
16/10/12	11:35:25	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:35:35	15	20	23	36	7.9	16	31	47	16.93
16/10/12	11:35:45	15	20	23	37	8.0	16	31	47	16.93
16/10/12	11:35:55	15	20	23	36	7.8	16	31	47	16.94

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
16/10/12	11:36:05	15	20	23	36	7.8	16	31	47	16.98
16/10/12	11:36:15	15	20	23	36	7.8	16	31	47	17.00
16/10/12	11:36:25	15	20	23	36	7.8	16	31	47	16.99
16/10/12	11:36:35	15	20	23	36	7.8	16	31	47	16.96
16/10/12	11:36:45	15	20	23	36	7.8	16	31	47	16.93
16/10/12	11:36:55	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:37:05	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:37:15	15	20	23	36	7.8	16	31	47	16.94
16/10/12	11:37:25	15	20	23	37	8.0	16	31	47	16.95
16/10/12	11:37:35	15	20	23	36	7.9	16	31	47	16.96
16/10/12	11:37:45	15	20	23	36	7.8	16	31	47	16.97
16/10/12	11:37:55	15	20	23	36	7.8	16	31	47	16.96
16/10/12	11:38:05	15	20	23	37	8.0	16	31	47	16.93
16/10/12	11:38:15	15	20	23	37	8.0	16	31	47	16.92
16/10/12	11:38:25	15	20	23	37	8.0	16	31	47	16.92
16/10/12	11:38:35	15	20	23	37	8.0	16	31	47	16.94
16/10/12	11:38:45	15	20	23	37	8.0	16	31	47	16.94
16/10/12	11:38:55	15	20	23	37	8.0	16	31	47	16.96
16/10/12	11:39:05	15	20	23	37	8.2	17	31	48	16.97
16/10/12	11:39:15	15	20	23	37	8.0	16	31	47	16.94
16/10/12	11:39:25	15	20	23	37	8.0	16	31	47	16.93
16/10/12	11:39:35	15	20	23	37	8.0	16	31	47	16.94
16/10/12	11:39:45	15	20	23	37	8.1	17	31	47	16.94
16/10/12	11:39:55	15	20	23	37	8.0	16	31	47	16.92
16/10/12	11:40:05	15	20	23	37	8.2	17	31	48	16.90
16/10/12	11:40:15	15	20	24	37	8.3	17	31	48	16.89
16/10/12	11:40:25	15	20	24	37	8.3	17	31	48	16.93
16/10/12	11:40:35	15	20	23	37	8.3	17	31	48	16.94
16/10/12	11:40:45	15	20	23	38	8.5	17	32	48	16.97
16/10/12	11:40:55	16	21	24	39	8.5	17	33	50	16.95
16/10/12	11:41:05	15	20	24	38	8.5	17	32	48	16.95
16/10/12	11:41:15	15	20	24	37	8.4	17	31	48	16.95
16/10/12	11:41:25	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:41:35	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:41:45	16	21	24	39	8.5	17	33	50	16.93
16/10/12	11:41:55	16	21	24	39	8.5	17	33	50	16.93
16/10/12	11:42:05	16	21	24	39	8.5	17	33	50	16.93
16/10/12	11:42:15	15	20	24	38	8.6	18	32	48	16.95
16/10/12	11:42:25	15	20	24	38	8.8	18	32	49	16.97
16/10/12	11:42:35	15	20	24	38	8.9	18	32	49	16.95
16/10/12	11:42:45	16	21	24	40	8.8	18	33	51	16.93
16/10/12	11:42:55	16	21	24	39	8.7	18	33	51	16.91
16/10/12	11:43:05	15	20	24	38	8.7	18	32	49	16.93
16/10/12	11:43:15	15	20	24	38	8.7	18	32	49	16.93
16/10/12	11:43:25	16	21	24	39	8.6	18	33	51	16.95
16/10/12	11:43:35	16	21	24	39	8.6	18	33	51	16.94
16/10/12	11:43:45	15	20	24	38	8.5	17	32	48	16.95
16/10/12	11:43:55	15	20	24	38	8.7	18	32	49	16.93
16/10/12	11:44:05	16	21	24	39	8.6	18	33	51	16.91
16/10/12	11:44:15	16	21	25	39	8.7	18	33	51	16.89
16/10/12	11:44:25	16	21	24	39	8.6	18	33	51	16.92
16/10/12	11:44:35	16	21	24	39	8.6	18	33	51	16.93
16/10/12	11:44:45	16	21	24	39	8.6	18	33	51	16.95
16/10/12	11:44:55	16	21	24	39	8.6	18	33	51	16.95
16/10/12	11:45:05	15	20	24	38	8.6	18	32	48	16.98
16/10/12	11:45:15	15	20	24	38	8.5	17	32	48	16.99
16/10/12	11:45:25	15	20	24	38	8.6	18	32	48	16.99
16/10/12	11:45:35	15	20	24	38	8.7	18	32	49	16.97
16/10/12	11:45:45	16	21	24	40	8.8	18	33	51	16.95
16/10/12	11:45:55	16	21	24	39	8.5	17	33	50	16.91
16/10/12	11:46:05	16	21	24	39	8.5	17	33	50	16.90
16/10/12	11:46:15	16	21	24	39	8.5	17	33	50	16.90
16/10/12	11:46:25	15	20	24	37	8.4	17	31	48	16.94
16/10/12	11:46:35	16	21	24	39	8.5	17	33	50	16.96
16/10/12	11:46:45	16	21	24	39	8.5	17	33	50	16.98
16/10/12	11:46:55	16	21	24	39	8.5	17	33	50	16.97
16/10/12	11:47:05	16	21	24	39	8.4	17	33	50	16.97
16/10/12	11:47:15	16	21	24	39	8.6	18	33	51	16.96
16/10/12	11:47:25	16	21	24	39	8.6	18	33	51	16.97
16/10/12	11:47:35	16	21	24	39	8.5	17	33	50	16.95
16/10/12	11:47:45	16	21	24	38	8.3	17	33	50	16.95
16/10/12	11:47:55	16	21	24	38	8.3	17	33	50	16.97
16/10/12	11:48:05	15	20	23	37	8.2	17	31	48	16.97
16/10/12	11:48:15	16	21	24	38	8.3	17	33	50	16.96
16/10/12	11:48:25	15	20	24	37	8.3	17	31	48	16.98
16/10/12	11:48:35	15	20	24	37	8.3	17	31	48	17.00
16/10/12	11:48:45	16	21	24	38	8.3	17	33	50	17.00
16/10/12	11:48:55	15	20	24	37	8.3	17	31	48	16.98
16/10/12	11:49:05	16	21	24	39	8.5	17	33	50	16.96
16/10/12	11:49:15	15	20	24	37	8.3	17	31	48	16.97
16/10/12	11:49:25	15	20	24	37	8.4	17	31	48	16.97
16/10/12	11:49:35	15	20	24	38	8.5	17	32	48	16.99
16/10/12	11:49:45	16	21	24	39	8.5	17	33	50	16.97
16/10/12	11:49:55	15	20	24	38	8.5	17	32	48	16.97

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
16/10/12	11:50:05	15	20	24	38	8.5	17	32	48	16.96
16/10/12	11:50:15	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:50:25	15	20	24	38	8.8	18	32	49	16.94
16/10/12	11:50:35	15	20	24	38	8.8	18	32	49	16.99
16/10/12	11:50:45	15	20	24	38	8.8	18	32	49	17.00
16/10/12	11:50:55	15	20	24	38	8.6	18	32	48	17.00
16/10/12	11:51:05	15	20	24	38	8.6	18	32	48	16.98
16/10/12	11:51:15	15	20	24	38	8.7	18	32	49	16.97
16/10/12	11:51:25	15	20	24	38	8.7	18	32	49	16.97
16/10/12	11:51:35	15	20	24	38	8.7	18	32	49	16.96
16/10/12	11:51:45	15	20	24	38	8.6	18	32	48	16.94
16/10/12	11:51:55	15	20	24	38	8.6	18	32	48	16.95
16/10/12	11:52:05	15	20	24	38	8.6	18	32	48	16.96
16/10/12	11:52:15	15	20	24	38	8.7	18	32	49	16.98
16/10/12	11:52:25	15	20	24	38	8.9	18	32	49	16.97
16/10/12	11:52:35	15	20	24	38	8.7	18	32	49	16.98
16/10/12	11:52:45	15	20	24	38	8.7	18	32	49	16.98
16/10/12	11:52:55	15	20	24	38	8.7	18	32	49	16.96
16/10/12	11:53:05	15	20	24	38	8.7	18	32	49	16.97
16/10/12	11:53:15	15	20	24	38	8.7	18	32	49	17.00
16/10/12	11:53:25	15	20	24	38	8.7	18	32	49	16.99
16/10/12	11:53:35	15	20	24	38	8.7	18	32	49	16.95
16/10/12	11:53:45	16	21	24	39	8.7	18	33	51	16.91
16/10/12	11:53:55	15	20	24	38	8.7	18	32	49	16.94
16/10/12	11:54:05	15	20	24	38	8.8	18	32	49	16.97
16/10/12	11:54:15	15	20	24	38	8.7	18	32	49	16.98
16/10/12	11:54:25	15	20	24	38	8.6	18	32	48	16.96
16/10/12	11:54:35	15	20	24	38	8.5	17	32	48	16.97
16/10/12	11:54:45	15	20	24	38	8.5	17	32	48	16.98
16/10/12	11:54:55	15	20	24	38	8.5	17	32	48	16.98
16/10/12	11:55:05	15	20	24	38	8.5	17	32	48	16.97
16/10/12	11:55:15	16	21	24	39	8.5	17	33	50	16.97
16/10/12	11:55:25	16	21	24	39	8.5	17	33	50	16.96
16/10/12	11:55:35	15	20	24	38	8.5	17	32	48	16.97
16/10/12	11:55:45	15	20	24	38	8.6	18	32	48	16.98
16/10/12	11:55:55	16	21	24	39	8.5	17	33	50	16.96
16/10/12	11:56:05	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:56:15	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:56:25	16	21	24	39	8.5	17	33	50	16.93
16/10/12	11:56:35	16	21	24	39	8.5	17	33	50	16.93
16/10/12	11:56:45	16	21	24	39	8.5	17	33	50	16.95
16/10/12	11:56:55	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:57:05	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:57:15	16	21	24	39	8.6	18	33	51	16.93
16/10/12	11:57:25	15	20	24	38	8.7	18	32	49	16.95
16/10/12	11:57:35	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:57:45	16	21	24	39	8.4	17	33	50	16.94
16/10/12	11:57:55	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:58:05	16	21	24	38	8.3	17	33	50	16.93
16/10/12	11:58:15	16	21	24	39	8.5	17	33	50	16.94
16/10/12	11:58:25	16	21	24	39	8.4	17	33	50	16.94
16/10/12	11:58:35	16	21	24	38	8.3	17	33	50	16.94
16/10/12	11:58:45	16	21	24	38	8.3	17	33	50	16.95
16/10/12	11:58:55	16	21	24	39	8.4	17	33	50	16.98
16/10/12	11:59:05	16	21	24	39	8.5	17	33	50	16.97
16/10/12	11:59:15	16	21	24	38	8.3	17	33	50	16.94
16/10/12	11:59:25	16	21	24	38	8.3	17	33	50	16.94
16/10/12	11:59:35	16	21	24	39	8.4	17	33	50	16.94
16/10/12	11:59:45	16	21	24	38	8.3	17	33	50	16.95
16/10/12	11:59:55	16	21	24	39	8.4	17	33	50	16.95
16/10/12	12:00:05	16	21	24	39	8.4	17	33	50	16.94
16/10/12	12:00:15	16	21	24	39	8.5	17	33	50	16.93
16/10/12	12:00:25	16	21	24	39	8.5	17	33	50	16.95
16/10/12	12:00:35	15	20	24	38	8.6	18	32	48	16.95
16/10/12	12:00:45	15	20	24	38	8.8	18	32	49	16.96
16/10/12	12:00:55	15	20	24	38	8.9	18	32	49	16.96
16/10/12	12:01:05	15	20	24	38	8.8	18	32	49	16.93
16/10/12	12:01:15	15	20	24	38	8.7	18	32	49	16.94
16/10/12	12:01:25	15	20	24	38	8.7	18	32	49	16.94
16/10/12	12:01:35	15	20	24	38	8.7	18	32	49	16.94
16/10/12	12:01:45	15	20	24	38	8.7	18	32	49	16.93
16/10/12	12:01:55	15	20	24	38	8.8	18	32	49	16.92
16/10/12	12:02:05	15	20	24	38	8.8	18	32	49	16.93
16/10/12	12:02:15	15	20	24	38	8.8	18	32	49	16.95
16/10/12	12:02:25	15	20	24	38	8.9	18	32	49	16.96
16/10/12	12:02:35	15	20	24	39	9.0	18	32	49	16.94
16/10/12	12:02:45	15	20	24	39	9.1	19	32	49	16.94
16/10/12	12:02:55	15	20	24	39	9.1	19	32	49	16.97
16/10/12	12:03:05	15	20	24	39	9.0	18	32	49	16.97
16/10/12	12:03:15	15	20	24	39	9.1	19	32	49	16.98
16/10/12	12:03:25	15	20	24	39	9.1	19	32	49	16.99
16/10/12	12:03:35	15	20	24	39	9.1	19	32	49	16.98
16/10/12	12:03:45	15	20	24	39	9.1	19	32	49	16.96
16/10/12	12:03:55	15	20	24	39	9.1	19	32	49	16.95

Date	Time	NO (ppm)	NO (mg/m ³)	NOx (ppm)	NOx (mg/m ³)	NO ₂ (ppm)	NO ₂ (mg/m ³)	Equiv NO ₂ (ppm)	Equiv NO ₂ (mg/m ³)	O ₂ (%)
16/10/12	12:04:05	14	19	24	38	9.4	19	31	48	16.95
16/10/12	12:04:15	15	20	24	39	9.3	19	32	50	16.96
16/10/12	12:04:25	15	20	24	39	9.3	19	32	50	16.94
16/10/12	12:04:35	15	20	24	39	9.2	19	32	50	16.95
16/10/12	12:04:45	15	20	24	39	9.3	19	32	50	16.93
16/10/12	12:04:55	15	20	24	39	9.2	19	32	50	16.97
16/10/12	12:05:05	15	20	24	39	9.3	19	32	50	16.97
16/10/12	12:05:15	15	20	24	39	9.3	19	32	50	16.95
16/10/12	12:05:25	15	20	24	39	9.3	19	32	50	16.95
16/10/12	12:05:35	15	20	24	39	9.3	19	32	50	16.98
16/10/12	12:05:45	14	19	24	38	9.4	19	31	48	17.00
16/10/12	12:05:55	14	19	24	38	9.3	19	31	48	17.01
16/10/12	12:06:05	14	19	24	38	9.3	19	31	48	17.00
16/10/12	12:06:15	15	20	24	39	9.3	19	32	50	16.97
16/10/12	12:06:25	14	19	24	38	9.3	19	31	48	16.96
16/10/12	12:06:35	15	20	24	39	9.1	19	32	49	16.96
16/10/12	12:06:45	15	20	24	39	9.1	19	32	49	16.96
16/10/12	12:06:55	15	20	24	39	9.2	19	32	50	16.94
16/10/12	12:07:05	15	20	24	39	9.3	19	32	50	16.92
16/10/12	12:07:15	15	20	24	39	9.3	19	32	50	16.92
16/10/12	12:07:25	15	20	24	39	9.3	19	32	50	16.90
16/10/12	12:07:35	15	20	24	39	9.2	19	32	50	16.93
16/10/12	12:07:45	15	20	24	39	9.1	19	32	49	16.95
16/10/12	12:07:55	15	20	24	39	9.3	19	32	50	16.95
16/10/12	12:08:05	15	20	24	39	9.2	19	32	50	16.95
16/10/12	12:08:15	15	20	24	39	9.3	19	32	50	16.95
16/10/12	12:08:25	15	20	24	39	9.3	19	32	50	16.93
16/10/12	12:08:35	15	20	24	39	9.3	19	32	50	16.94
16/10/12	12:08:45	15	20	24	39	9.4	19	32	50	16.97
16/10/12	12:08:55	14	19	24	38	9.5	20	31	48	16.98
	Average	15	21	24	38	8.3	17.1	32	49	16.9
	Maximum	16	21	25	40	9.5	19.5	33	51	17.0
	Minimum	14	19	23	36	7.5	15.4	31	46	16.8
Avg Corrected to 18% O₂		11	15	17	28	6.1	12.6	23	36	NA

Appendix D

Historical Data (2 pages)

Appendix D Historical Data (2 pages)

Kiln 1	2011	Oct-12
Total Particulate @ 18%O ₂ (mg/m ³)	<0.1	0.68
Fine Particulate - PM ₁₀ @ 18%O ₂ (mg/m ³)	<0.12	1.1
Total Fluoride (mg/m ³)	0.58	3.6
Sulfuric Acid Mist - H ₂ SO ₄ as SO ₃ (mg/m ³)	1.7	1.5
Sulfur Dioxide - SO ₂ as SO ₃ (mg/m ³)	81	130
Total Hazardous Substances (mg/m ³)	0.12	0.26
Cadmium (mg/m ³)	0.0042	0.0024
Mercury (mg/m ³)	0.0069	0.00079
Total Oxides of Nitrogen @ 18%O ₂ (mg/m ³)	55	25
Nitrogen Oxide @ 18%O ₂ (mg/m ³)	25	14
Nitrogen Dioxide @ 18%O ₂ (mg/m ³)	29.6	10.9
Equivalent NO ₂ @ 18%O ₂ (mg/m ³)	68	33
Oxygen (%)	17.9	17.8
Kiln 2		
Total Particulate @ 18%O ₂ (mg/m ³)	0.044	0.48
Fine Particulate - PM ₁₀ @ 18%O ₂ (mg/m ³)	0.024	0.78
Total Fluoride (mg/m ³)	0.19	3.8
Sulfuric Acid Mist - H ₂ SO ₄ as SO ₃ (mg/m ³)	6.7	6.5
Sulfur Dioxide - SO ₂ as SO ₃ (mg/m ³)	93	150
Total Hazardous Substances (mg/m ³)	0.1	0.79
Cadmium (mg/m ³)	0.0013	0.00085
Mercury (mg/m ³)	0.0062	0.00068
Total Oxides of Nitrogen @ 18%O ₂ (mg/m ³)	61	28
Nitrogen Oxide @ 18%O ₂ (mg/m ³)	15	15
Nitrogen Dioxide @ 18%O ₂ (mg/m ³)	46.2	12.6
Equivalent NO ₂ @ 18%O ₂ (mg/m ³)	69	36
Oxygen (%)	17.4	16.9
Clay Prep		
Total Particulate (mg/m ³)	1.7	0.64
Fine Particulates - PM ₁₀ (mg/m ³)	<0.13	0.85
Pressing and Drying		
Total Particulate (mg/m ³)	8.6	0.47
Fine Particulates - PM ₁₀ (mg/m ³)	1.4	1.3
Dryer 1		
Total Particulate (mg/m ³)	2.4	2
Fine Particulates - PM ₁₀ (mg/m ³)	0.74	0.84
Dryer 2		
Total Particulate (mg/m ³)	0.82	1.3
Fine Particulates - PM ₁₀ (mg/m ³)	<0.3	0.88

Glazeline		
Total Particulate (mg/m ³)	<0.22	0.42
Fine Particulates - PM ₁₀ (mg/m ³)	<0.2	<0.2
Selection Line		
Total Particulate (mg/m ³)	0.19	<0.21
Fine Particulates - PM ₁₀ (mg/m ³)	<0.13	<0.27
Spray Dryer		
Total Particulate (mg/m ³)	7.9	5.1
Fine Particulates - PM ₁₀ (mg/m ³)	1.4	0.62
Hot Air Cooler 1		
Total Particulate (mg/m ³)	2.7	0.28
Fine Particulates - PM ₁₀ (mg/m ³)	<0.19	<0.19
Hot Air Cooler 2		
Total Particulate (mg/m ³)	<0.83	<0.21
Fine Particulates - PM ₁₀ (mg/m ³)	<0.36	0.49

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This is the end of the Report