

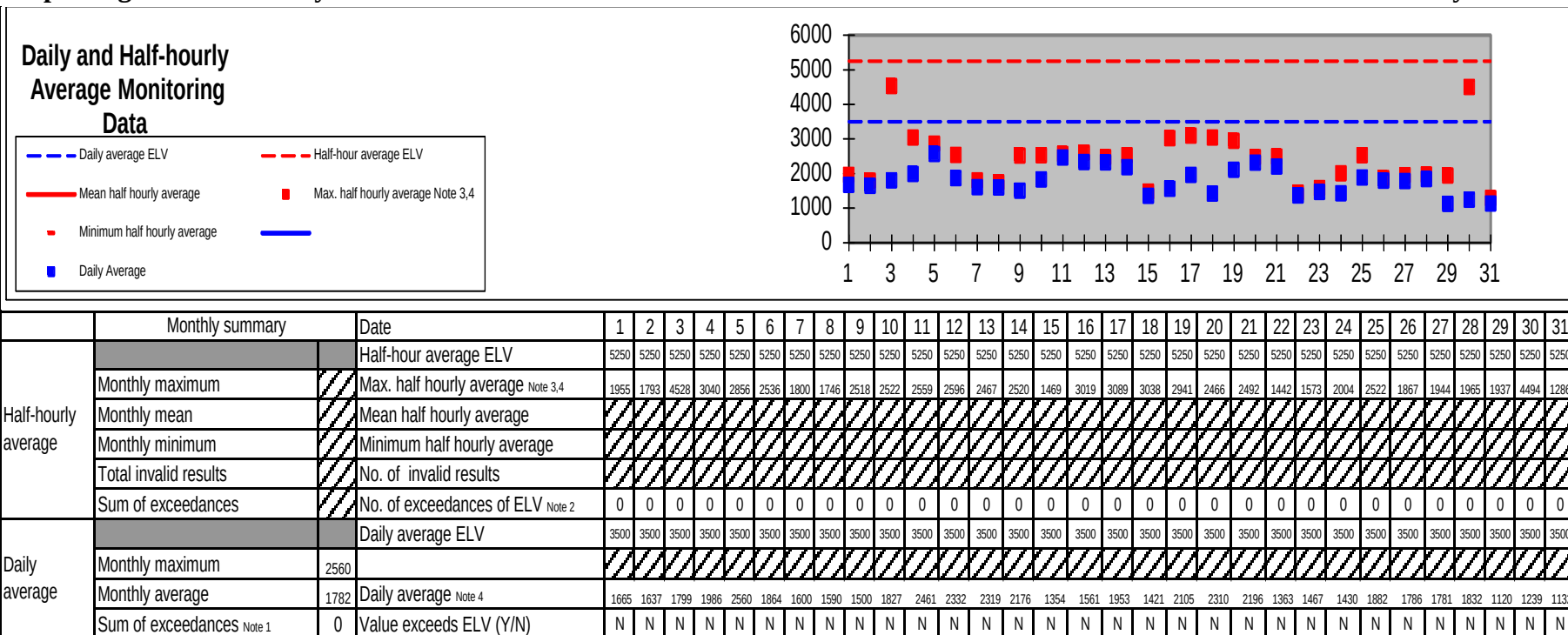
Reference Number: BU2110IS

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A1 / Form Dated 1st February 2006

Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide Emission Point A1 for the month of January 2017



Note 1: Not more than one calendar monthly average during any rolling twelve month period shall exceed the limit value by more than 10%.

Note 2: Not more than one half hour period (commencing on the hour or half hour) during any 24 hour period shall exceed the daily average limit value of 3500mg/m³ by more than 50%.

Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m³.

Note 4: All results corrected to 273K, 101.3kPa.

Note 5: 31st Jan plant down A MUF main steam header leak/repairs

Signed *PS Lloyd*
(authorised to sign as representative of Operator)

Date: 30th April 2017

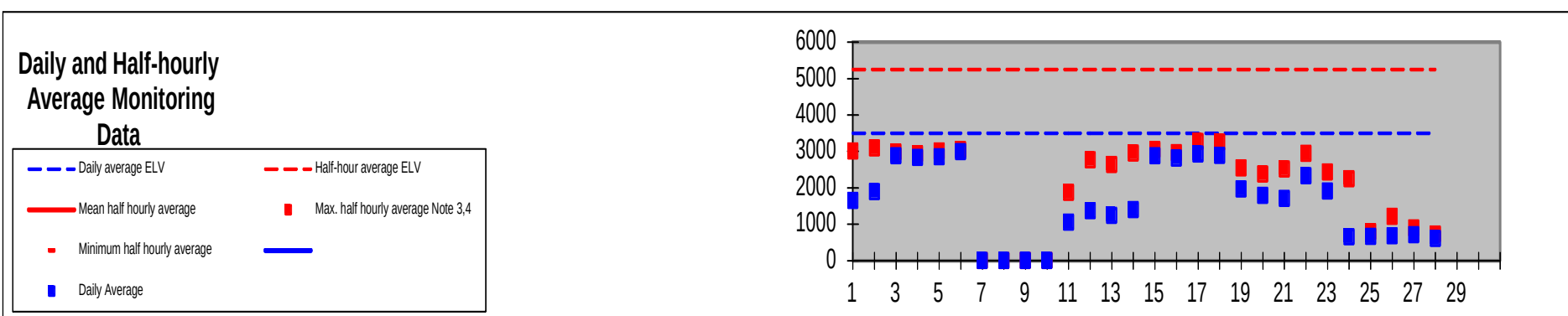
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	Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29		
Half-hourly average			Half-hour average ELV	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250			
	Monthly maximum	///	Max. half hourly average <small>Note 3,4</small>	3011	3093	2980	2936	3005	3047	0	0	0	0	1868	2765	2632	2948	3047	2965	3265	3253	2540	2377	2515	2940	2436	2247	793	1212	895	731			
	Monthly mean	///	Mean half hourly average	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	
	Monthly minimum	///	Minimum half hourly average	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	
	Total invalid results	///	No. of invalid results	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	
	Sum of exceedances	///	No. of exceedances of ELV <small>Note 2</small>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Daily average			Daily average ELV	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500		
	Monthly maximum	2992		///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Monthly average	1863	Daily average <small>Note 4</small>	1652	1896	2881	2834	2851	2992	0	0	0	0	1058	1375	1243	1397	2883	2810	2924	2889	1963	1786	1705	2330	1911	654	665	680	709	611			
	Sum of exceedances <small>Note 1</small>	0	Value exceeds ELV (Y/N)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Note 1: Not more than one calendar monthly average during any rolling twelve month period shall exceed the limit value by more than 10%.

Note 2: Not more than one half hour period (commencing on the hour or half hour) during any 24 hour period shall exceed the daily average limit value of 3500mg/m³ by more than 50%.

Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m³.

Note 4: All results corrected to 273K, 101.3kPa.

Note 5 Feb 7th -10th DC TCS Outage then MUF repair, 19th Feb TCS trip/AHCL limitation (DC) A unit (down 10 hrs.).

Signed *PS Lord*
(authorised to sign as representative of Operator)

Date: 30th April 2017

Reference Number: BU2110IS

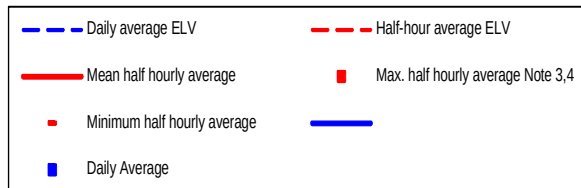
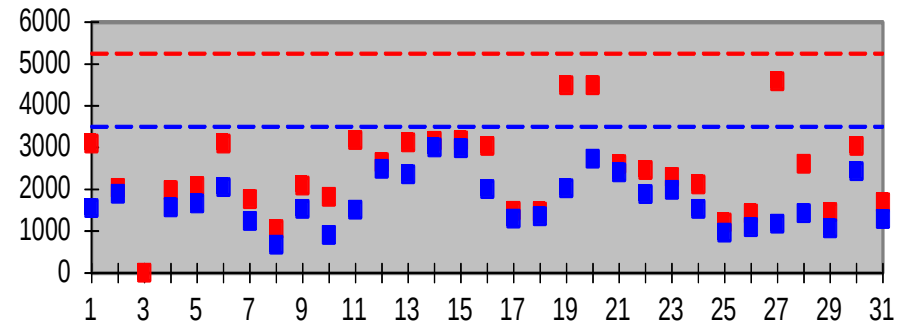
Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A1 / Form Dated 1st February 2006

Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide Emission Point A1 for the month of March 2017

Daily and Half-hourly Average Monitoring Data



	Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Half-hourly average			Half-hour average ELV	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250
	Monthly maximum	///	Max. half hourly average <small>Note 3,4</small>	3096	2029	0	1972	2076	3089	1757	1046	2090	1814	3175	2645	3120	3154	3163	3033	1486	1465	4491	4491	2599	2455	2291	2113	1201	1416	4586	2606	1453	3040	1689
	Monthly mean	///	Mean half hourly average	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Monthly minimum	///	Minimum half hourly average	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Total invalid results	///	No. of invalid results	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Sum of exceedances	///	No. of exceedances of ELV <small>Note 2</small>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily average			Daily average ELV	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	Monthly maximum	2995		///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Monthly average	1734	Daily average <small>Note 4</small>	1543	1887		1565	1663	2049	1241	672	1529	907	1507	2483	2358	2995	2977	2007	1299	1354	2019	2728	2405	1879	1989	1531	958	1096	1171	1428	1060	2431	1284
	Sum of exceedances <small>Note 1</small>	0	Value exceeds ELV (Y/N)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Note 1: Not more than one calendar monthly average during any rolling twelve month period shall exceed the limit value by more than 10%.

Note 2: Not more than one half hour period (commencing on the hour or half hour) during any 24 hour period shall exceed the daily average limit value of 3500mg/m³ by more than 50%.

Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m³.

Note 4: All results corrected to 273K, 101.3kPa.

Note 5: Plant Shutdown (SD) 3rd Mar, 5th Mar TCS trip & H2 analyser issues / Lack of H2 A Unit, 27th Mar Comb Air Inverter cooling fan failure

Signed *PS Lloyd*
(authorised to sign as representative of Operator)

Date: 30th April 2017

Reference Number: BU2110IS

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A3 / Form Dated 1st February 2006

Reporting of Emissions to Air for the period 1 January 2017 to 31 March 2017

Emission Point	Substance / Parameter	Emission Limit Value ^[6]	Result ^[1] [Note A]	Test Method ^[2]	Sample Date and Times ^{[3] [7]}	Accreditation/ Certification ^[4]	Uncertainty +/- ^[5]
A1	Chlorine	10mg/m ³ ^[8]	9.5 mg/m ³	US EPA Method 26A	28/02/2017 1100-1130, 1135-1205,1215-1245,1250-1320,1327-1357hrs	MCERTS / UKAS	+/- 1.24 mg/m3
A1	Chloromethanes (as methyl chloride)	50mg/m ³	1.69 mg/m ³	BS EN 13649	28/02/2017:1100-1105,1210-1215,1320-1325hrs	MCERTS / UKAS	+/- 0.41 mg/m3
A1	Hydrogen chloride	10mg/m ³	5.7 mg/m ³	TGN M22	01/03/2017:1500-1600,1605-1705,1710-1810hrs	MCERTS / UKAS	+/- 1.6 mg/m3

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given.

[3] For non-continuous measurements the date and time of the sample that produced the result is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated. The basis of any other uncertainty figure needs to be stated. Where no figure is available the Agency will need to agree an appropriate uncertainty value.

[6] Corrected to 273K, 101.3Kpa.

[7] The tests were carried out at scrubber pH (pH 8.8) to assist in maintaining the improvement in caustic scrubber efficiency to reduce chlorine emissions at A1 stack outlet.

[8] Reversion to 10mg/m3 chlorine emission limit as documented in EPR/BU2110IS/V007. Calculated as the average of 5 consecutive x30 minute samples taken every quarter. Results above 14.6mg/m3 shall be removed from these calculations.

[Note A]: Results are given as averages being more representative, as agreed with NRW.



Signed
(authorised to sign as representative of the Operator)

Date: 30th April 2017

Permit Reference Number: BU2110IS

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: W1 / Form Dated 1st February 2006

Reporting of Emissions to Water (other than to Sewer) for the period from 1 January 2017 to 31 March 2017

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
W1	Oil and grease	5mg/l ^[6]	<0.2	IR Spectrometry - EA Test 362 ISBN 0117517283	20/03/2017 1155hrs	UKAS	Data not provided by NLS lab
	BOD ₅	20mg/l ^[6]	1.94	ISBN 011 7522120	20/03/2017 1155hrs	UKAS	+/-18.08%
	pH	>5, <9 ^[7]	7.94	BS 6068-2.50:1995	20/03/2017 1155hrs	UKAS	+/- 1.11
W2	Oil and grease	5mg/l ^[6]	<0.2	IR Spectrometry - EA Test 362 ISBN 0117517283	20/03/2017 1155hrs	UKAS	Data not provided by NLS lab
	BOD ₅	20mg/l ^[6]	1.79	ISBN 011 7522120	20/03/2017 1155hrs	UKAS	+/-18.08%
	pH	>5, <9 ^[7]	7.84	BS 6068-2.50:1995	20/03/2017 1155hrs	UKAS	+/- 1.11
W3	Oil and grease	5mg/l ^[6]	No sample	IR Spectrometry - EA Test 362 ISBN 0117517283	No sample	UKAS	
	BOD ₅	20mg/l ^[6]	No sample	ISBN 011 7522120	No sample	UKAS	
	pH	>5, <9 ^[7]	No sample	BS 6068-2.50:1995	No sample	UKAS	

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Due to heavy rainfall coinciding with either high tide or flood warnings, the outlet point W3 was partially submerged therefore a representative sample of free flowing site storm water to river could not be taken.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given.

[3] For non-continuous measurements the date and time of the sample that produced the result is given.

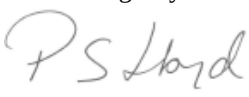
[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated. The basis of any other uncertainty figure needs to be stated. Where no figure is available the Agency will need to agree an appropriate uncertainty value. * A further request has been sent to EA labs to obtain Oil & Grease Uncertainty.

[6] The emission limit value for Oil and grease, and BOD₅, is expressed as a maximum individual value.

[7] The emission limit values for pH are expressed as minimum and maximum individual values.

[8] The Environment Agency National Testing Laboratory at Shawcross in Exeter has obtained UKAS accreditation for the oil and grease test method.

Signed 
(authorised to sign as representative of the Operator)

Date: 30th April 2017