

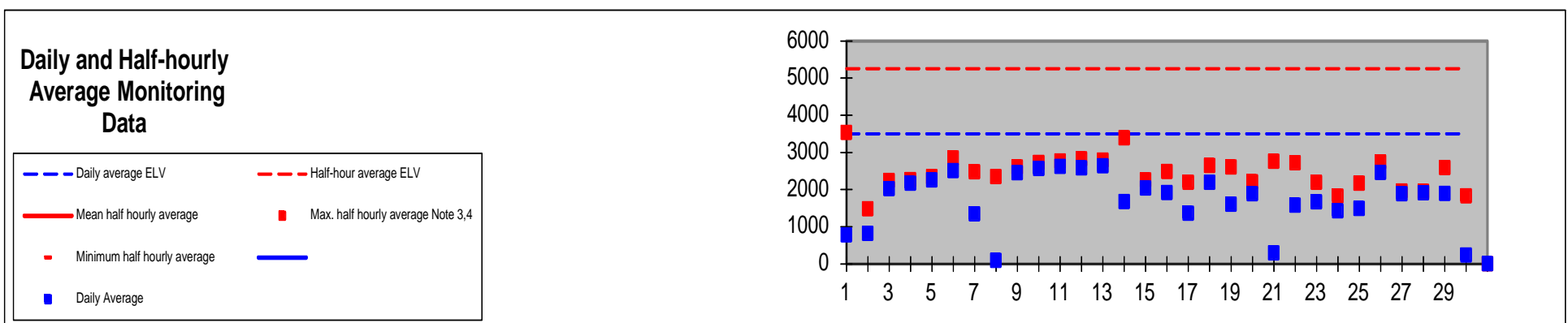
Reference Number: BU2110IS

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A1 / Form Dated 1<sup>st</sup> February 2006

**Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide Emission Point A1 for the month of July 2014**



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		
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			
	Monthly maximum	Max. half hourly average Note 3,4	3534	1485	2243	2265	2346	2851	2473	2344	2604	2728	2770	2825	2794	3386	2258	2484	2190	2649	2608	2211	2760	2720	2195	1819	2169	2744	1960	1954	2587	1831	0	
	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 Note 2		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		
	Monthly maximum	2640	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
	Monthly average	1690	Daily average Note 4	783	821	2027	2168	2260	2512	1346	89	2451	2563	2619	2585	2640	1673	2041	1916	1358	2193	1605	1886	294	1581	1664	1425	1494	2458	1885	1913	1893	237	0
	Sum of exceedances Note 1	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/m<sup>3</sup> by more than 50%.  
 Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m<sup>3</sup>.  
 Note 4: All results corrected to 273K, 101.3kPa.  
 Note 5: July 7-8<sup>th</sup> unplanned downtime 'A' unit- fan repair. 21<sup>st</sup> July 'A' unit shutdown: lack of feedstock. 30-31<sup>st</sup> July A&B unit shutdown for repair to 46% GRP line

Signed ..... *PS Lord* .....

Date: 20<sup>th</sup> October 2014

(authorised to sign as representative of Operator)

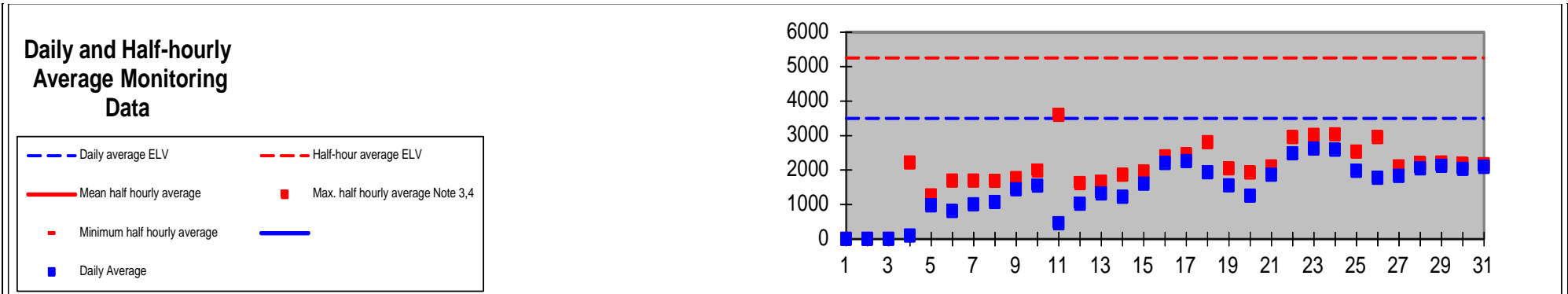
Reference Number: BU2110IS

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A1 / Form Dated 1<sup>st</sup> February 2006

**Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide Emission Point A1 for the month of August 2014**



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 Note 3,4	0	0	0	2218	1263	1695	1691	1682	1761	1981	3604	1619	1661	1864	1958	2392	2455	2807	2048	1925	2101	2956	3020	3031	2531	2957	2104	2203	2221	2181	2168
	Monthly mean	Mean half hourly average	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Monthly minimum	Minimum half hourly average	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Sum of exceedances	No. of exceedances of ELV Note 2	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	2637	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Monthly average	2040	Daily average Note 4	0	0	0	97	971	815	1003	1070	1445	1550	458	1020	1319	1228	1607	2205	2262	1936	1553	1257	1863	2483	2625	2589	1975	1771	1827	2046	2122	2029
Sum of exceedances Note 1	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/m<sup>3</sup> by more than 50%.  
 Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m<sup>3</sup>.  
 Note 4: All results corrected to 273K, 101.3kPa.  
 Note 5: 1<sup>st</sup>-4<sup>th</sup> A&B shutdown for repair to 46% GRP line. 11<sup>th</sup> August CO CEM routine calibration.

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

Date: 20<sup>th</sup> October 2014

Reference Number: BU2110IS

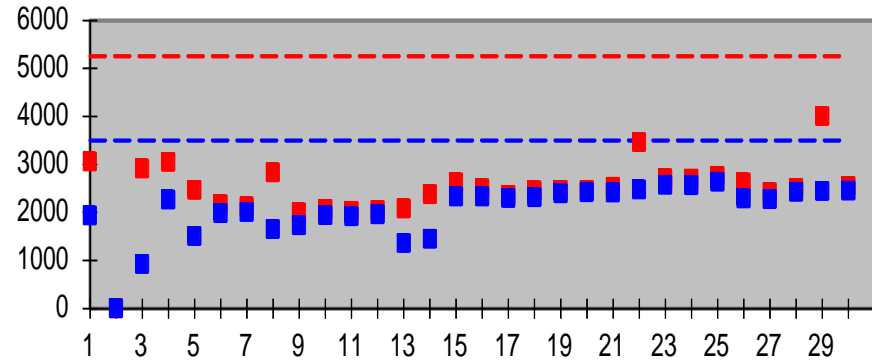
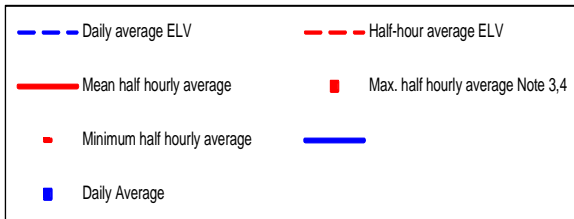
Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A1 / Form Dated 1<sup>st</sup> February 2006

**Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide Emission Point A1 for the month of September 2014**

**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	
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		
	Monthly maximum	Max. half hourly average Note 3,4	3060	0	2913	3053	2465	2166	2124	2833	2001	2069	2029	2052	2082	2379	2624	2500	2366	2461	2467	2467	2530	3462	2712	2704	2763	2622	2416	2509	4002	2546	
	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 Note 2		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	2436	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		
	Monthly average	1357	Daily average Note 4	1936	0	922	2266	1506	1982	2005	1655	1734	1947	1916	1957	1360	1453	2329	2332	2296	2316	2397	2416	2413	2474	2572	2568	2637	2288	2274	2430	2441	2452
	Sum of exceedances Note 1	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	

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/m<sup>3</sup> by more than 50%.  
 Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m<sup>3</sup>.  
 Note 4: All results corrected to 273K, 101.3kPa.  
 Note 5: Sept 2<sup>nd</sup> A&B units shutdown- planned maint.

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

Date: 20<sup>th</sup> October 2014

Reference Number: BU2110IS

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A3 / Form Dated 1<sup>st</sup> February 2006

**Reporting of Emissions to Air for the period 1 July 2014 to 30 September 2014**

Emission Point	Substance / Parameter	Emission Limit Value <sup>[6]</sup>	Result <sup>[1]</sup> [Note A]	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3] [7]</sup>	Accreditation/Certification <sup>[4]</sup>	Uncertainty +/- <sup>[5]</sup>
A1	Chlorine	20mg/m <sup>3</sup> <sup>[8]</sup>	3.2 mg/m <sup>3</sup>	US EPA Method 26A	07/08/2014 1015-1115, 1120-1220,1225-1325hrs	MCERTS / UKAS	+/- 0.4 mg/m <sup>3</sup>
A1	Chloromethanes (as methyl chloride)	50mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	BS EN 13649	07/08/2014 1015-1115, 1120-1220,1225-1325hrs	MCERTS / UKAS	+/- 0.4 mg/m <sup>3</sup>
A1	Hydrogen chloride	10mg/m <sup>3</sup>	3.6 mg/m <sup>3</sup>	TGN M22	07/08/2014 1015-1115, 1120-1220,1225-1325hrs	MCERTS / UKAS	+/- 1.6 mg/m <sup>3</sup>

[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. Please note TGN M22 method replacing ASTM D6348-03 in accordance with EA (NRW) Monitoring Standard.

[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] 20mg/m<sup>3</sup> chlorine emission limit to be applied and revert to 10mg/m<sup>3</sup> by an agreed date with the NRW

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

Signed .....  
(authorised to sign as representative of the Operator)

Date: 20<sup>th</sup> October 2014

Permit Reference Number: BU2110IS

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: W1 / Form Dated 1<sup>st</sup> February 2006

**Reporting of Emissions to Water (other than to Sewer) for the period from 1 July 2014 to 30 September 2014**

Emission Point	Substance / Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
W1	Oil and grease	5mg/l <sup>[6]</sup>	No Result <sup>[9]</sup>	IR Spectrometry - EA Test 362 ISBN 0117517283		UKAS	
	BOD <sub>5</sub>	20mg/l <sup>[6]</sup>	No Result <sup>[9]</sup>	ISBN 011 7522120		UKAS	
	pH	>5, <9 <sup>[7]</sup>	No Result <sup>[9]</sup>	BS 6068-2.50:1995		UKAS	
W2	Oil and grease	5mg/l <sup>[6]</sup>	No Result <sup>[9]</sup>	IR Spectrometry - EA Test 362 ISBN 0117517283		UKAS	
	BOD <sub>5</sub>	20mg/l <sup>[6]</sup>	No Result <sup>[9]</sup>	ISBN 011 7522120		UKAS	
	pH	>5, <9 <sup>[7]</sup>	No Result <sup>[9]</sup>	BS 6068-2.50:1995		UKAS	
W3	Oil and grease	5mg/l <sup>[6]</sup>	No Result <sup>[9]</sup>	IR Spectrometry - EA Test 362 ISBN 0117517283		UKAS	
	BOD <sub>5</sub>	20mg/l <sup>[6]</sup>	No Result <sup>[9]</sup>	ISBN 011 7522120		UKAS	
	pH	>5, <9 <sup>[7]</sup>	No Result <sup>[9]</sup>	BS 6068-2.50:1995		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. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[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] The emission limit value for Oil and grease, and BOD<sub>5</sub>, 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.

[9] Unable to obtain water sample from W1, W2 or W3 outlets due to very low rainfall and lack of flow to obtain water samples during this period .Communication email sent to NRW 6<sup>th</sup> October 2014.

*PS Lord*

Signed .....  
(authorised to sign as representative of the Operator)

Date: 20<sup>th</sup> October 2014