

## RELEASES TO AIR

Operational summary for quarter ending 31-Dec-18

**Operator:** Tata Steel UK Ltd

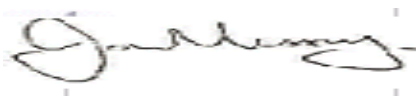
**Location:** Port Talbot Works

**Permit:** BL7108 / BL7108IM (V009)

Operational parameters: Raw materials - Gas production and usage

| Release point                                      | Month   | Gas flared (GJ) | Gas vented (GJ) | Gas produced (GJ) |
|----------------------------------------------------|---------|-----------------|-----------------|-------------------|
| A12A<br>BOS convertor 1<br>gas flare               | Month 1 | 5662            |                 |                   |
|                                                    | Month 2 | 3566            |                 |                   |
|                                                    | Month 3 | 4548            |                 |                   |
| A13A<br>BOS convertor 2<br>gas flare               | Month 1 | 11325           |                 |                   |
|                                                    | Month 2 | 7132            |                 |                   |
|                                                    | Month 3 | 9096            |                 |                   |
| A33<br>Blast furnace gas flare<br>stack no.1       | Month 1 | 868             |                 |                   |
|                                                    | Month 2 | 3467            |                 |                   |
|                                                    | Month 3 | 3627            |                 |                   |
| A33C<br>Blast furnace gas flare<br>stack no.2      | Month 1 | 9664            |                 |                   |
|                                                    | Month 2 | 18301           |                 |                   |
|                                                    | Month 3 | 4817            |                 |                   |
| A33A<br>Blast furnace gas main<br>number 4 bleeder | Month 1 |                 | 105             |                   |
|                                                    | Month 2 |                 | 16              |                   |
|                                                    | Month 3 |                 | 105             |                   |
| A33B<br>Blast furnace gas main<br>number 5 bleeder | Month 1 |                 | 129             |                   |
|                                                    | Month 2 |                 | 11              |                   |
|                                                    | Month 3 |                 | 68              |                   |
| A59<br>Coke oven gas triple<br>flare               | Month 1 | 15770           |                 |                   |
|                                                    | Month 2 | 24392           |                 |                   |
|                                                    | Month 3 | 41657           |                 |                   |
| Blast furnaces<br>4 and 5                          | Month 1 |                 |                 | 1120284           |
|                                                    | Month 2 |                 |                 | 858405            |
|                                                    | Month 3 |                 |                 | 958705            |
| Coke ovens                                         | Month 1 |                 |                 | 509147            |
|                                                    | Month 2 |                 |                 | 365223            |
|                                                    | Month 3 |                 |                 | 496241            |
| BOS Plant                                          | Month 1 |                 |                 | 138632            |
|                                                    | Month 2 |                 |                 | 106955            |
|                                                    | Month 3 |                 |                 | 123351            |

**Signed on behalf of the Operator**



**Dated**

04/01/19

**Form Installation gas**

## WASTE PRODUCTION

Operational summary for quarter ending 31-Dec-18

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

**Permit:** BL7108

| Release point               | Month | Steel slag (tonnes) | Desulph slag (tonnes) | Hazardous waste * (tonnes) | Non hazard waste * (tonnes) | BF slag (tonnes) | Oil used in coke ovens (tonnes) | Waste oil reductant (tonnes) |
|-----------------------------|-------|---------------------|-----------------------|----------------------------|-----------------------------|------------------|---------------------------------|------------------------------|
| BOS                         | Oct   | 17599               | 6313                  |                            |                             |                  |                                 |                              |
|                             | Nov   | 42787               | 2226                  |                            |                             |                  |                                 |                              |
|                             | Dec   | 15060               | 3595                  |                            |                             |                  |                                 |                              |
| Iron and steel installation | Oct   |                     |                       | 12.4                       | 1336                        |                  |                                 |                              |
|                             | Nov   |                     |                       | 1.1                        | 1577                        |                  |                                 |                              |
|                             | Dec   |                     |                       | 5.5                        | 1598                        |                  |                                 |                              |
| BF4 tapholes                | Oct   |                     |                       |                            |                             | 35860            |                                 |                              |
|                             | Nov   |                     |                       |                            |                             | 41876            |                                 |                              |
|                             | Dec   |                     |                       |                            |                             | 38735            |                                 |                              |
| BF5 tapholes                | Oct   |                     |                       |                            |                             | 0                |                                 |                              |
|                             | Nov   |                     |                       |                            |                             | 0                |                                 |                              |
|                             | Dec   |                     |                       |                            |                             | 0                |                                 |                              |
| BF5                         | Oct   |                     |                       |                            |                             |                  |                                 |                              |
|                             | Nov   |                     |                       |                            |                             |                  |                                 |                              |
|                             | Dec   |                     |                       |                            |                             |                  |                                 |                              |
| Coke ovens                  | Oct   |                     |                       |                            |                             |                  | 149                             | **                           |
|                             | Nov   |                     |                       |                            |                             |                  | 141                             | **                           |
|                             | Dec   |                     |                       |                            |                             |                  | 157                             | **                           |

\* Disposal to Morfa landfill site non-hazardous and hazardous cells.

\*\* WID compliant Oil.

**Signed on behalf of the Operator**



**Dated** 03/01/19

**Form Waste 1**

## RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

**Operator:** Tata Steel UK Ltd

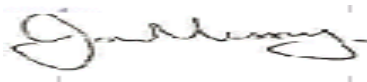
**Location:** Port Talbot Works

**Permit:** BL7108

**Release Points:** A50, A51, A52A, A52B, A53 & A62

| Operating details                        | BOILERS           |                   |           |              |              |                 |             |
|------------------------------------------|-------------------|-------------------|-----------|--------------|--------------|-----------------|-------------|
|                                          | A50A<br>Service 4 | A50B<br>Service 5 | A51<br>A5 | A52A<br>No.6 | A52B<br>No.7 | A53<br>Mitchell | A62<br>No.3 |
| Operating time (hours)                   | 2208              | 2208              | 1427      | 2208         | 1366         | 1899            | 2167        |
| Mean load (%MCR)                         | 45.7              | 56.7              | 42.6      | 79.4         | 69.3         | 54.3            | 41.8        |
| Mean flue gas flow (Nm <sup>3</sup> /hr) | 64945             | 71955             | 36572     | 196252       | 142679       | 127065          | 115305      |
| <b>Heavy Fuel Oil</b>                    |                   |                   |           |              |              |                 |             |
| Average net CV (GJ/t)                    | 40.9              | 40.9              | 40.9      | 40.9         | 40.9         | 40.9            |             |
| Max. sulphur content (g/Kg)              | 10                | 10                | 10        | 10           | 10           | 10              |             |
| Max. asphaltene content (g/Kg)           | 46                | 46                | 46        | 46           | 46           | 46              |             |
| Ave.%wt Sulphur                          | 0.995             | 0.995             | 0.995     | 0.995        | 0.995        | 0.995           |             |
| NOx factor                               | 0.1               | 0.1               | 0.1       | 0.1          | 0.1          | 0.1             |             |
| <b>Coke Oven Gas</b>                     |                   |                   |           |              |              |                 |             |
| Average net CV (GJ/km <sup>3</sup> )     | 16.72             | 16.72             | 16.72     | 16.72        | 16.72        | 16.72           |             |
| Sulphur content (g/m <sup>3</sup> )      | 5.34              | 5.34              | 5.34      | 5.34         | 5.34         | 5.34            |             |
| NOx factor                               | 0.04              | 0.04              | 0.04      | 0.04         | 0.04         | 0.04            |             |
| <b>Blast Furnace Gas</b>                 |                   |                   |           |              |              |                 |             |
| Average net CV (GJ/km <sup>3</sup> )     | 3.67              | 3.67              | 3.67      | 3.67         | 3.67         | 3.67            | 3.67        |
| Sulphur content (g/Nm <sup>3</sup> )     | 0.024             | 0.024             | 0.024     | 0.024        | 0.024        | 0.024           | 0.024       |
| NOx factor                               | 0.025             | 0.025             | 0.025     | 0.025        | 0.025        | 0.025           | 0.025       |
| <b>Natural Gas</b>                       |                   |                   |           |              |              |                 |             |
| Average net CV (GJ/km <sup>3</sup> )     | 37.4              | 37.4              | 37.4      | 37.4         | 37.4         | 37.4            | 37.4        |
| NOx factor                               | 0.04              | 0.04              | 0.04      | 0.04         | 0.04         | 0.04            | 0.04        |

Signed on behalf of the Operator



Dated

16/01/19

## RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

**Permit:** BL7108 / NP3938GZ

**Release Points:** A50A/A50B, A51, A52A, A52B, A53 & A62

| SULPHUR DIOXIDE - SO <sub>2</sub> (DISCONTINUOUS MONITORING) |                       |                    |  |  |                 |                       |
|--------------------------------------------------------------|-----------------------|--------------------|--|--|-----------------|-----------------------|
| Release Point                                                | A50A&B<br>Service 4&5 | A51<br>A5          |  |  | A53<br>Mitchell | A62<br>No.3           |
| Time and date of sampling                                    | 07-Nov-18<br>14:11    | 10-Dec-18<br>14:18 |  |  |                 | 23-Nov-18<br>14:33:00 |
| Flowrate (Nm <sup>3</sup> /hr)                               | 129702                | 70051              |  |  |                 | 179,915               |
| SO <sub>2</sub> measured conc. (mg/Nm <sup>3</sup> )         | 1191<br>(+/-84.9)     | 121<br>(+/- 6.2)   |  |  |                 | 64<br>(+/- 10.2)      |
| SO <sub>2</sub> limit (mg/NM <sup>3</sup> )                  | 800 BFG/COG           | 800 BFG/COG        |  |  |                 | 400 BFG&NG            |
| Sampling method used                                         | BS 6069               | BS 6069            |  |  |                 | BS 6069               |
| Analytical method used                                       | EC*                   | EC*                |  |  |                 | EC*                   |
| Continuous hourly monitoring result over the period          | 0                     |                    |  |  |                 | 10.1                  |
| Fuel usages over                                             |                       |                    |  |  |                 |                       |
| Natural gas (%)                                              | 0%                    | 0%                 |  |  |                 | 64%                   |
| BF gas (%)                                                   | 6%                    | 82%                |  |  |                 | 36%                   |
| Coke oven gas (%)                                            | 94%                   | 18%                |  |  |                 |                       |
| Heavy fuel oil (%)                                           | 0%                    | 0%                 |  |  |                 |                       |

A52A, A52B and A62 (Boiler 3) have an annual monitoring requirement. A50A/A50B have a six monthly monitoring requirement.

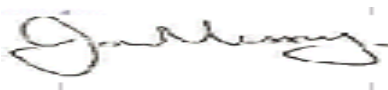
CEMS subject to QAL2 in 2013

Unable to test Mitchell boiler due to safety issues.

\* EC - electrochemical cell

\*\* Mitchell boiler unable to sample due to safety issues.

**Signed on behalf of the Operator**



Dated

04/01/19

## RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

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**Location:** Port Talbot Works

**Permit:** BL7108 / NP3938GZ

**Release Points:** A50A/A50B, A51, A52A, A52B, A53 & A62

| SULPHUR DIOXIDE - SO <sub>2</sub> (DISCONTINUOUS MONITORING) |                       |                    |  |  |                 |                       |
|--------------------------------------------------------------|-----------------------|--------------------|--|--|-----------------|-----------------------|
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| Coke oven gas (%)                                            | 94%                   | 18%                |  |  |                 |                       |
| Heavy fuel oil (%)                                           | 0%                    | 0%                 |  |  |                 |                       |

A52A, A52B and A62 (Boiler 3) have an annual monitoring requirement. A50A/A50B have a six monthly monitoring requirement.

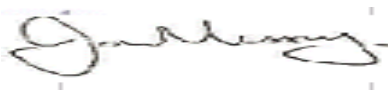
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Dated

04/01/19

## RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

**Permit:** BL7108

**Release Points:** A50A, A50B, A51, A52A, A52B, A53 & A62

| Release point            | Month | Fuel oil (GJ) | Coke oven gas (GJ) | Blast furnace gas (GJ) | Natural gas (GJ) | BOS gas (GJ) | All fuels (GJ) |
|--------------------------|-------|---------------|--------------------|------------------------|------------------|--------------|----------------|
| A50A<br>Service Boiler 4 | O     | 0             | 30173              | 23826                  | 9963             |              | 63963          |
|                          | N     | 0             | 51556              | 12151                  | 3494             |              | 67201          |
|                          | D     | 0             | 40471              | 30074                  | 5189             |              | 75735          |
| A50B<br>Service Boiler 5 | O     | 0             | 47759              | 23487                  | 6911             |              | 78156          |
|                          | N     | 0             | 68783              | 12162                  | 3576             |              | 84521          |
|                          | D     | 0             | 65343              | 24601                  | 4438             |              | 94383          |
| A51<br>Boiler A5         | O     | 508           | 1276               | 8166                   | 497              | 0            | 10446          |
|                          | N     | 1353          | 5835               | 34144                  | 1589             | 55           | 42977          |
|                          | D     | 672           | 7877               | 43406                  | 3158             | 49           | 55162          |
| A52A<br>Boiler 6         | O     | 11238         | 84464              | 151123                 | 30986            | 26574        | 304385         |
|                          | N     | 5129          | 79257              | 208819                 | 19713            | 979          | 313898         |
|                          | D     | 1201          | 81135              | 188119                 | 31645            | 7013         | 309112         |
| A52B<br>Boiler 7         | O     | 10939         | 54456              | 182593                 | 31785            | 26855        | 306627         |
|                          | N     | 0             | 10995              | 61353                  | 8426             | 23719        | 104494         |
|                          | D     | 488           | 37925              | 62858                  | 11889            | 16337        | 129496         |
| A53<br>Mitchell          | O     | 1503          | 4934               | 68635                  | 4062             |              | 79133          |
|                          | N     | 728           | 7364               | 91807                  | 4252             |              | 104151         |
|                          | D     | 824           | 7763               | 105726                 | 2865             |              | 117179         |
| A62<br>Boiler 3          | O     |               |                    | 14947                  | 57798            | 0            | 72745          |
|                          | N     |               |                    | 98175                  | 15850            | 0            | 114025         |
|                          | D     |               |                    | 38867                  | 51456            | 0            | 90324          |
| Total                    | O     | 24188         | 223061             | 472775                 | 142000           | 53429        | 915453         |
|                          | N     | 7209          | 223792             | 518611                 | 56900            | 24754        | 831266         |
|                          | D     | 3185          | 240515             | 493651                 | 110640           | 23399        | 871390         |

Signed on behalf of the Operator

Dated 03/01/19

Form LCPD Fuels

## RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

**Operator:** Tata Steel UK Ltd

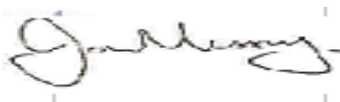
**Location:** Port Talbot Works

**Permit:** BL7108

**Release Points:** A50A, A50B, A51, A52A, A52B & A53

| PARTICULATE MATTER (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING |       |                          |                     |                              |                     |                                    |                           |
|---------------------------------------------------------------|-------|--------------------------|---------------------|------------------------------|---------------------|------------------------------------|---------------------------|
| Release point                                                 | Month | Monthly mean<br>LIMIT=50 | Maximum hourly mean | Date & time of maximum value | Minimum hourly mean | Standard deviation of hourly means | % data capture over month |
| A50A & A50B Service Boilers 4&5                               | Oct   | 2.5                      | 12.6                | 10/10/18 17:00               | 0.1                 | 1.5                                | 97%                       |
|                                                               | Nov   | 1.5                      | 3.6                 | 14/11/18 13:00               | 0.7                 | 0.5                                | 100%                      |
|                                                               | Dec   | 1.1                      | 3.1                 | 27/12/18 20:00               | 0.7                 | 0.4                                | 100%                      |
| A51 Boiler A5                                                 | Oct   | 0.2                      | 5.7                 | 23/10/18 06:00               | 0.0                 | 0.6                                | 100%                      |
|                                                               | Nov   | 0.6                      | 11.7                | 29/11/18 04:00               | -0.7                | 1.0                                | 100%                      |
|                                                               | Dec   | 0.7                      | 5.4                 | 10/12/18 21:00               | 0.1                 | 0.5                                | 100%                      |
| A52A Boiler 6                                                 | Oct   | 3.2                      | 40.8                | 23/10/18 17:00               | 0.6                 | 6.3                                | 100%                      |
|                                                               | Nov   | 2.6                      | 26.4                | 20/11/18 20:00               | 1.3                 | 3.8                                | 100%                      |
|                                                               | Dec   | 2.0                      | 23.7                | 31/12/18 13:00               | 0.9                 | 2.7                                | 100%                      |
| A52B Boiler 7                                                 | Oct   | 2.9                      | 44.7                | 03/10/18 03:00               | 0.0                 | 7.5                                | 100%                      |
|                                                               | Nov   | 0.2                      | 33.8                | 09/11/18 14:00               | 0.0                 | 1.3                                | 100%                      |
|                                                               | Dec   | 2.5                      | 164.5               | 13/12/18 22:00               | 0.0                 | 10.0                               | 100%                      |
| A53 Mitchell                                                  | Oct   | 1.0                      | 37.5                | 02/10/18 03:00               | 0.0                 | 2.0                                | 95%                       |
|                                                               | Nov   | 5.2                      | 161.2               | 20/11/18 10:00               | 0.0                 | 10.5                               | 100%                      |
|                                                               | Dec   | 4.3                      | 33.5                | 31/12/18 10:00               | 2.0                 | 2.7                                | 100%                      |

Signed on behalf of the Operator



Dated

16/01/19

Form LCPD CEM Parts

# RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

**Permit:** BL7108 / BL7108IM (V009)

**Release Points:** A50, A52A & A52B

| OXIDES OF NITROGEN (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING |       |                                      |                           |                                    |                           |                                          |                                 |
|---------------------------------------------------------------|-------|--------------------------------------|---------------------------|------------------------------------|---------------------------|------------------------------------------|---------------------------------|
| Release point                                                 | Month | Month mean<br>LIMITS:<br>BFG/COG=300 | Maximum<br>hourly<br>mean | Date & time<br>of maximum<br>value | Minimum<br>hourly<br>mean | Standard<br>deviation of<br>hourly means | % data<br>capture<br>over month |
| A52A<br>Boiler 6                                              | Oct   | 292.9                                | 818.0                     | 10/10/2018 18:00                   | 69.8                      | 120.4                                    | 100%                            |
|                                                               | Nov   | 298.5                                | 739.7                     | 23/11/2018 16:00                   | 59.7                      | 86.1                                     | 100%                            |
|                                                               | Dec   | 252.4                                | 655.6                     | 10/12/2018 17:00                   | 65.4                      | 73.1                                     | 100%                            |
| A52B<br>Boiler 7                                              | Oct   | 66.4                                 | 191.2                     | 25/10/2018 20:00                   | 23.1                      | 36.7                                     | 21%                             |
|                                                               | Nov   | 13.3                                 | 89.2                      | 02/11/2018 21:00                   | 0.0                       | 23.3                                     | 100%                            |
|                                                               | Dec   | 18.9                                 | 187.9                     | 14/12/2018 16:00                   | 0.0                       | 24.5                                     | 100%                            |
| A50A & A50B<br>Service Boilers                                | Oct   | 293.5                                | 724.9                     | 28/10/2018 7:00                    | 0.0                       | 151.0                                    | 97%                             |
|                                                               | Nov   | 397.2                                | 670.2                     | 02/11/2018 22:00                   | 114.3                     | 101.5                                    | 100%                            |
|                                                               | Dec   | 311.1                                | 638.2                     | 01/12/2018 21:00                   | 75.1                      | 106.1                                    | 100%                            |
| SULPHUR DIOXIDE (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING    |       |                                      |                           |                                    |                           |                                          |                                 |
| Release point                                                 | Month | Month mean<br>LIMITS:<br>BFG/COG=500 | Maximum<br>hourly<br>mean | Date & time<br>of maximum<br>value | Minimum<br>hourly<br>mean | Standard<br>deviation of<br>hourly means | % data<br>capture<br>over month |
| A52A<br>Boiler 6                                              | Oct   | 443.2                                | 801.4                     | 23/10/2018 15:00                   | 139.4                     | 111.4                                    | 100%                            |
|                                                               | Nov   | 441.8                                | 744.8                     | 09/11/2018 17:00                   | 207.9                     | 85.2                                     | 100%                            |
|                                                               | Dec   | 431.0                                | 672.2                     | 31/12/2018 9:00                    | 146.7                     | 87.9                                     | 100%                            |
| A52B<br>Boiler 7                                              | Oct   | 205.0                                | 696.7                     | 28/10/2018 18:00                   | 62.8                      | 154.0                                    | 21%                             |
|                                                               | Nov   | 35.1                                 | 243.8                     | 03/11/2018 18:00                   | 0.0                       | 61.7                                     | 100%                            |
|                                                               | Dec   | 158.0                                | 710.9                     | 31/12/2018 14:00                   | 0.0                       | 158.5                                    | 100%                            |
| A50A & A50B<br>Service Boilers                                | Oct   | 608.6                                | 1629.4                    | 20/10/2018 6:00                    | 40.8                      | 436.9                                    | 97%                             |
|                                                               | Nov   | 1127.7                               | 2257.6                    | 06/11/2018 19:00                   | 220.5                     | 426.9                                    | 100%                            |
|                                                               | Dec   | 803.5                                | 1878.7                    | 02/12/2018 8:00                    | 91.0                      | 311.3                                    | 100%                            |

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**Dated** 16/01/19

**Form LCPD CEMS SO2 & NOx**

**RELEASES INTO AIR**

Operational summary for quarter ending

31-Dec-18

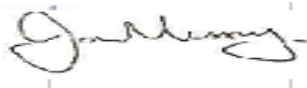
**Operator:** Tata Steel UK Ltd**Location:** Port Talbot Works**Permit:** BL7108 / NP3938GZ**Release Point:** A62

| <b>PARTICULATE MATTER (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING</b> |       |                    |              |                              |                    |                                   |                         |                             |                      |
|----------------------------------------------------------------------|-------|--------------------|--------------|------------------------------|--------------------|-----------------------------------|-------------------------|-----------------------------|----------------------|
| <b>Release point</b>                                                 | Month | Maximum daily mean | Monthly mean | Date & time of maximum value | Minimum daily mean | Standard deviation of daily means | % valid monitor reponse | Fuel weighted monthly limit | % Abnormal condtions |
| A62 Boiler 3                                                         | Oct   | 13.0               | 5.4          | 29-Oct-18                    | 0.0                | 3.4                               | 100.0%                  | 6.1                         | 79.3%                |
|                                                                      | Nov   | 6.6                | 4.5          | 22-Nov-18                    | 3.3                | 1.0                               | 100.0%                  | 9.3                         | 12.1%                |
|                                                                      | Dec   | 15.5               | 6.8          | 10-Dec-18                    | 3.0                | 3.6                               | 100.0%                  | 6.8                         | 63.7%                |
| <b>SULPHUR DIOXIDE (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING</b>    |       |                    |              |                              |                    |                                   |                         |                             |                      |
| <b>Release point</b>                                                 | Month | Maximum daily mean | Monthly mean | Date & time of maximum value | Minimum daily mean | Standard deviation of daily means | % valid monitor reponse | Fuel weighted monthly limit | % Abnormal condtions |
| A62 Boiler 3                                                         | Oct   | 30.1               | 18.8         | 29-Oct-18                    | 0.0                | 8.1                               | 100.0%                  | 70.4                        | 79.3%                |
|                                                                      | Nov   | 28.6               | 24.6         | 12-Nov-18                    | 21.8               | 1.7                               | 100.0%                  | 177.8                       | 12.1%                |
|                                                                      | Dec   | 28.9               | 24.3         | 16-Dec-18                    | 21.6               | 2.2                               | 100.0%                  | 95.7                        | 63.7%                |
| <b>OXIDES OF NITROGEN (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING</b> |       |                    |              |                              |                    |                                   |                         |                             |                      |
| <b>Release point</b>                                                 | Month | Maximum daily mean | Monthly mean | Date & time of maximum value | Minimum daily mean | Standard deviation of daily means | % valid monitor reponse | Fuel weighted monthly limit | % Abnormal condtions |
| A62 Boiler 3                                                         | Oct   | 28.9               | 8.3          | 27-Oct-18                    | 0.0                | 7.2                               | 100.0%                  | 121.4                       | 79.3%                |
|                                                                      | Nov   | 84.8               | 25.0         | 29-Nov-18                    | 8.1                | 17.7                              | 100.0%                  | 186.6                       | 12.1%                |
|                                                                      | Dec   | 31.1               | 15.8         | 21-Dec-18                    | 7.4                | 6.2                               | 100.0%                  | 136.8                       | 63.7%                |

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**Dated**

17/01/19



Form LCPD CEM A62

Operational summary for quarter ending 31-Dec-18

**Release Points:** A50A, A50B, A51, A52A, A52B, A53 & A62

0

Johnny

Form LCPD CEMS LOG

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

**Permit:** BL7108 / NP3938GZ

**Release Point:** A1

| Substance                                             | Particulates      | Sulphur Dioxide   | Oxides of Nitrogen | Carbon Monoxide     |
|-------------------------------------------------------|-------------------|-------------------|--------------------|---------------------|
| Permit limit (mg/Nm3)                                 | 40                | 500               | 500                |                     |
| Measured conc. according to condition 10.1.3b         | 132<br>(+/- 11.0) | 443<br>(+/- 56.2) | 176<br>(+/- 21.5)  | 6250<br>(+/- 919.5) |
| Measured oxygen content (%)                           | 16.0              | 17.7              | 17.7               | 17.7                |
| Measured conc. according to condition 10.1.3a (17%O2) | 27                | 540               | 214                | 7617                |
| Sampling method used                                  | BS EN 13284       | BS 6069           | ISO 10849          | BS ISO 12039        |
| Analytical method used                                | Gravimetric       | *EC               | *EC                | *EC                 |
| Date of sampling                                      | 22-Oct-18         | 22-Oct-18         | 22-Oct-18          | 22-Oct-18           |
| Sample start time                                     | 10:45             | 10:25             | 10:25              | 10:25               |
| Sample end time                                       | 13:01             | 11:25             | 11:25              | 11:25               |
| Sample duration (mins)                                | 60                | 60                | 60                 | 60                  |
| Limit of detection                                    | 0.96              | 1.6               | 1.4                | 0.0                 |
| Continuous monitor result over the sampling period    | 18.9              |                   |                    |                     |
| <b>Process status at the time of sampling</b>         |                   |                   |                    |                     |
| Mean sulphur content of sinter blend in use (%)       | 0.017             | 0.017             | 0.017              | 0.017               |
| Reverts content of sinter blend in use (%)            | 0.11              | 0.11              | 0.11               | 0.11                |
| Mean chloride content of sinter blend in use (%)      | 0.024             | 0.024             | 0.024              | 0.024               |
| Throughput during sampling period (% of maximum)      | 60.0              | 60.0              | 60.0               | 60.0                |

\* EC - electrochemical cell

**Signed on behalf of the Operator**



**Dated**

11/01/19

# RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108 / AP3330BE

Release Points: A50A, A50B, A51, A52A, A52B, A53 & A62

| Month                 | Sulphur Dioxide<br>(tonnes) |      |          |      |      |     | Oxides of Nitrogen<br>(tonnes) |         |      |       |      |      | Particulates<br>(tonnes) |     |         |      |       |      |      |     |      |
|-----------------------|-----------------------------|------|----------|------|------|-----|--------------------------------|---------|------|-------|------|------|--------------------------|-----|---------|------|-------|------|------|-----|------|
|                       | A50A                        | A50B | A51      | A52A | A52B | A53 | A62                            | A50A    | A50B | A51   | A52A | A52B | A53                      | A62 | A50A    | A50B | A51   | A52A | A52B | A53 | A62  |
| January               | 13.5                        | 13.5 | 4.7      | 26.6 | 28.3 | 6.3 | 1.7                            | 3.7     | 3.7  | 1.7   | 9.1  | 6.9  | 4.2                      | 1.3 | 0.0     | 0.0  | 0.03  | 0.3  | 0.1  | 0.2 | 0.12 |
| February              | 11.2                        | 11.2 | 6.3      | 30.6 | 22.5 | 6.3 | 1.4                            | 3.1     | 3.1  | 1.7   | 8.7  | 6.5  | 3.3                      | 1.3 | 0.0     | 0.0  | 0.01  | 0.3  | 0.4  | 0.2 | 0.12 |
| March                 | 10.2                        | 10.2 | 4.9      | 26.9 | 19.2 | 5.4 | 1.4                            | 2.5     | 2.5  | 1.5   | 10.0 | 8.1  | 3.6                      | 1.0 | 0.0     | 0.0  | 0.20  | 0.4  | 0.1  | 0.3 | 0.12 |
| April                 | 6.0                         | 6.0  | 4.3      | 28.3 | 26.6 | 4.6 | 1.4                            | 0.9     | 0.9  | 1.7   | 9.0  | 8.9  | 3.4                      | 1.0 | 0.0     | 0.0  | 0.00  | 0.3  | 0.4  | 0.3 | 0.17 |
| May                   | 15.1                        | 15.1 | 3.8      | 32.5 | 23.8 | 4.9 | 7.2                            | 4.4     | 4.4  | 1.5   | 8.5  | 7.6  | 3.0                      | 5.3 | 0.1     | 0.1  | 0.05  | 0.2  | 0.1  | 0.1 | 0.17 |
| June                  | 13.8                        | 13.8 | 1.5      | 27.2 | 26.1 | 1.1 | 1.4                            | 2.5     | 2.5  | 1.7   | 9.5  | 8.6  | 0.4                      | 0.4 | 0.0     | 0.0  | 0.03  | 0.2  | 0.1  | 0.0 | 0.12 |
| July                  | 6.3                         | 6.3  | 6.4      | 22.9 | 9.1  | 1.6 | 0.0                            | 4.7     | 4.7  | 0.4   | 2.2  | 2.2  | 0.9                      | 5.6 | 0.1     | 0.1  | 0.00  | 0.2  | 0.1  | 0.1 | 0.12 |
| August                | 7.3                         | 7.3  | 3.7      | 34.8 | 39.3 | 6.3 | 1.4                            | 1.5     | 1.5  | 1.8   | 8.5  | 9.8  | 4.0                      | 5.3 | 0.0     | 0.0  | 0.02  | 0.2  | 0.1  | 0.2 | 0.19 |
| September             | 14.1                        | 14.1 | 1.5      | 42.9 | 35.5 | 5.7 | 1.1                            | 3.1     | 3.1  | 0.7   | 9.0  | 8.7  | 3.3                      | 0.3 | 0.0     | 0.0  | 0.00  | 0.2  | 0.1  | 0.2 | 0.15 |
| October               | 11.2                        | 11.2 | 1.1      | 58.1 | 40.3 | 4.5 | 0.7                            | 2.4     | 2.4  | 0.3   | 10.0 | 9.7  | 2.2                      | 0.2 | 0.0     | 0.0  | 0.00  | 0.3  | 0.3  | 0.1 | 0.13 |
| November              | 18.8                        | 18.8 | 4.6      | 51.7 | 6.9  | 5.8 | 1.1                            | 4.1     | 4.1  | 1.3   | 10.1 | 2.5  | 2.8                      | 0.7 | 0.0     | 0.0  | 0.02  | 0.3  | 0.0  | 0.1 | 0.17 |
| December              | 19.2                        | 19.2 | 5.6      | 51.9 | 24.5 | 6.5 | 0.9                            | 4.6     | 4.6  | 1.6   | 10.0 | 3.9  | 3.2                      | 0.5 | 0.0     | 0.0  | 0.02  | 0.2  | 0.2  | 0.1 | 0.15 |
| Totals                | 147                         | 35   | 49       | 434  | 302  | 59  | 20                             | 37      | 37   | 16    | 104  | 83   | 34                       | 23  | 0.5     | 0.5  | 0.4   | 3.1  | 2.1  | 1.9 | 1.7  |
|                       | 1046                        |      |          |      |      |     | 335                            |         |      |       |      |      | 10                       |     |         |      |       |      |      |     |      |
|                       | Service                     | A5   | Margam C | Mit  | 3    |     |                                | Service | A5   | Mgm C | Mit  | 3    |                          |     | Service | A5   | Mgm C | Mit  | 3    |     |      |
| Boiler Plant Totals   | 182                         | 49   | 737      | 59   | 20   |     |                                | 75      | 16   | 188   | 34   | 23   |                          |     | 1       | 0    | 5     | 2    | 2    |     |      |
| NERP Annual Limit (T) | 686                         | 251  | 2219     | 575  |      |     |                                | 252     | 96   | 929   | 212  |      |                          |     | 20      | 4    | 56    | 10   |      |     |      |

0

Dated 16/01/19

Form LCPD Monthly 1

# RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

**Permit:** BL7108 / NP3938GZ

**Release Points:** A6, A7, A30, A31, A32, A34A, A34B & A39

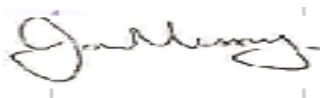
| OXIDES OF NITROGEN - NOx (DISCONTINUOUS MONITORING) |                 |                                                    |     |     |     |                 |                 |                 |
|-----------------------------------------------------|-----------------|----------------------------------------------------|-----|-----|-----|-----------------|-----------------|-----------------|
| Release Point                                       | A6              | No Data available for A7 due to furnace not active | A30 | A31 | A32 | A34A            | A34B            | A39 #           |
| Time and date of sampling                           | 15-Oct-18 11:07 |                                                    |     |     |     | 01-Oct-18 11:16 | 01-Oct-18 11:19 | 26-Nov-18 09:40 |
| Flowrate (Nm3/hr)                                   | 320100          |                                                    |     |     |     | 97688           | 98674           | 30,635          |
| NOx measured conc.(mg/Nm3) **                       | 96 (+/-3.3)     |                                                    |     |     |     | 491 (+/- 31.6)  | 824 (+/-51.7)   | 23 (+/-0.5)     |
| Oxygen content (%)                                  | 4.7             |                                                    |     |     |     |                 |                 |                 |
| NOx limits (mg/Nm3)                                 | 100             |                                                    |     |     |     | 1800            | 1800            | 115             |
| Sampling method used                                | ISO 10849       |                                                    |     |     |     | ISO 10849       | ISO 10849       | ISO 10849       |
| Analytical method used                              | EC *            |                                                    |     |     |     | EC *            | EC *            | EC *            |
| Continuous hourly monitoring result over the period |                 |                                                    |     |     |     |                 |                 |                 |
| Fuel usages over the sampling period                |                 |                                                    |     |     |     |                 |                 |                 |
| Natural gas (%)                                     | 3%              |                                                    |     |     |     | 74%             | 16%             | 100%            |
| BF gas (%)                                          | 69%             |                                                    |     |     |     |                 |                 | 0%              |
| Coke oven gas (%)                                   | 7%              |                                                    |     |     |     | 26%             | 84%             |                 |
| BOS Gas (%)                                         | 22%             |                                                    |     |     |     |                 |                 |                 |

\* EC - electrochemical cell

A30, A31 & A32 are no longer a permit requirement/ non operational

# A39 has a 6 monthly monitoring requirement.

Signed on behalf of the Operator



Dated 20/12/18

Form I&S DCM NOx

## RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

**Permit:** BL7108 / NP3938GZ

**Release Points:** A6, A7, A34A & A34B

16

| SULPHUR DIOXIDE - SO2 (DISCONTINUOUS MONITORING)    |                 |                                                    |                 |                 |                 |
|-----------------------------------------------------|-----------------|----------------------------------------------------|-----------------|-----------------|-----------------|
| Release Point                                       | A6              | No Data available for A7 due to furnace not active | A34A            | A34B            | A39 #           |
| Time and date of sampling                           | 15-Oct-18 11:07 |                                                    | 01-Oct-18 11:16 | 01-Oct-18 11:19 | 26-Nov-18 09:40 |
| Flowrate (Nm3/hr)                                   | 320100          |                                                    | 97688           | 98674           | 30,635          |
| SO2 measured conc.(mg/Nm3)                          | 95.3 (+/- 3.5)  |                                                    | 184 (+/-12.5)   | 586 (+/-36.7)   | 0 (+/- 0.0)     |
| SO2 limits (mg/Nm3)                                 | 200             |                                                    | 1400            | 1400            | 260             |
| Sampling method used                                | BS6069          |                                                    | BS6069          | BS6069          | BS6069          |
| Analytical method used                              | EC *            |                                                    | EC *            | EC *            | EC *            |
| Continuous hourly monitoring result over the period |                 |                                                    |                 |                 |                 |
| Fuel usages over the sampling period                |                 |                                                    |                 |                 |                 |
| Natural gas (%)                                     | 3%              | 0%                                                 | 74%             | 16%             | 100%            |
| BF gas (%)                                          | 69%             | 98%                                                |                 |                 | 0%              |
| Coke oven gas (%)                                   | 7%              | 2%                                                 | 26%             | 84%             |                 |
| BOS Gas (%)                                         | 22%             |                                                    |                 |                 |                 |

\* EC - electrochemical cell

# A39 has a 6 monthly monitoring requirement

Signed on behalf of the Operator

Dated

20/12/18

Form I&S DCM SO2

## 0 RELEASES INTO AIR

Operational summary for quarter ending 31-Dec-18

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

**Permit:** BL7108 / PP3738SQ

**Release Points:** A6, A7, A21, A22, A24 & A46

| VARIOUS DISCONTINUOUS MONITORING |                      |                    |                                                                |                      |                       |
|----------------------------------|----------------------|--------------------|----------------------------------------------------------------|----------------------|-----------------------|
| Release Point                    | A21/A22              | A6                 |                                                                | A39 #<br>(6 Monthly) | A46*<br>(annual)      |
| Parameter                        | Chloride<br>(as HCl) | Carbon monoxide    |                                                                |                      | Oxides of<br>nitrogen |
| Time and date<br>of sampling     | 05-Nov-18<br>11:20   | 15-Oct-18<br>11:07 | No Data<br>available for<br>A7 due to<br>furnace not<br>active | 26-Nov-18<br>09:40   | -<br>-                |
| Flowrate<br>(Nm3/hr)             | 18,142               | 320100             |                                                                | 30,635               | -                     |
| Measured<br>conc.(mg/Nm3)        | 0.4<br>(+/-0.1)      | 7120<br>(+/-222.7) |                                                                | 109<br>(+/-2.3)      | -                     |
| Emission limits<br>(mg/Nm3)      | 5                    |                    |                                                                |                      |                       |
| Sampling method<br>used          | Isokinetic           | BS ISO 12039       |                                                                | BS ISO 12039         | ISO 10849             |
| Analytical method<br>used        | BSEN1911             | EC *               |                                                                | EC *                 | EC *                  |
| Fuel usages over                 |                      |                    |                                                                | g period             |                       |
| Natural gas (%)                  |                      | 3%                 |                                                                |                      |                       |
| BF gas (%)                       |                      | 69%                |                                                                |                      |                       |
| Coke oven gas (%)                |                      | 7%                 |                                                                |                      |                       |
| BOS Gas (%)                      |                      | 22%                |                                                                |                      |                       |

\* EC - electrochemical cell

\* No limit for A46 in new permit.

# A39 has a 6 monthly monitoring requirement - no yet taken for HY2

**Signed on behalf of the Operator**

Dated

11/01/19



Form I&S DCM Misc

**RELEASES INTO AIR**

Operational summary for quarter ending

31-Dec-18

**Operator:** Tata Steel UK Ltd

**Location:** Port Talbot Works

Permit: BL7108

**Release Points:** A4A, A5A, & iron plating

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# RELEASES INTO AIR

Operational summary for quarter ending 31-Dec-18

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

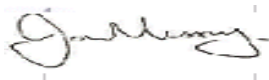
Permit: BL7108

Release Points: A2, A8A, A8B, A9, A10, A14, A15 & A16

| PARTICULATE MATTER (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING |       |       |                    |                    |                                   |                     |                     |                                  |              |                          |                           |
|---------------------------------------------------------------|-------|-------|--------------------|--------------------|-----------------------------------|---------------------|---------------------|----------------------------------|--------------|--------------------------|---------------------------|
| Release point                                                 | Month | Limit | Maximum daily mean | Minimum daily mean | Standard deviation of daily means | Maximum hourly mean | Minimum hourly mean | Standard deviation of hour means | Monthly mean | abatement availability % | % data capture over month |
| A8A                                                           | Oct   | 15    | 3                  | 2.1                | 0.2                               | 2.7                 | 1.8                 | 0.2                              | 2.5          | 100%                     | 100%                      |
|                                                               | Nov   |       | 2                  | 1.8                | 0.2                               | 2.5                 | 1.5                 | 0.3                              | 2.2          | 100%                     | 100%                      |
|                                                               | Dec   |       | 3                  | 1.8                | 0.2                               | 6.2                 | 1.5                 | 0.4                              | 2.2          | 100%                     | 100%                      |
| A8B                                                           | Oct   | 15    | 28                 | 5.0                | 5.1                               | 72.8                | 1.7                 | 9.0                              | 10.5         | 100%                     | 100%                      |
|                                                               | Nov   |       | 32                 | 5.9                | 5.1                               | 74.6                | 1.6                 | 10.3                             | 18.0         | 100%                     | 100%                      |
|                                                               | Dec   |       | 26                 | 12.9               | 3.3                               | 56.4                | 4.1                 | 7.4                              | 18.2         | 100%                     | 100%                      |
| A9                                                            | Oct   | 15    | 0                  | 0.0                | 0.0                               | 74.9                | 0.0                 | 11.5                             | 0.0          | 100%                     | 100%                      |
|                                                               | Nov   |       | 0                  | 0.0                | 0.0                               | 0.0                 | 0.0                 | 0.0                              | 0.0          | 100%                     | 100%                      |
|                                                               | Dec   |       | 0                  | 0.0                | 0.0                               | 0.0                 | 0.0                 | 0.0                              | 0.0          | 100%                     | 100%                      |
| A2*                                                           | Oct   | 30    | 50                 | 3.8                | 13.9                              | 170.9               | 0.0                 | 27.3                             | 17.3         | 100%                     | 100%                      |
|                                                               | Nov   |       | 32                 | 0.0                | 7.9                               | 68.7                | 0.0                 | 12.0                             | 15.1         | 100%                     | 100%                      |
|                                                               | Dec   |       | 30                 | 0.4                | 7.0                               | 39.5                | 0.0                 | 10.2                             | 13.8         | 100%                     | 100%                      |
| A10                                                           | Oct   | 15    | 3                  | 1.4                | 0.4                               | 6.2                 | 2.1                 | 1.0                              | 2.1          | 100%                     | 100%                      |
|                                                               | Nov   |       | 4                  | 1.9                | 0.4                               | 7.5                 | 2.9                 | 0.9                              | 2.6          | 100%                     | 100%                      |
|                                                               | Dec   |       | 3                  | 1.8                | 0.2                               | 5.4                 | 2.3                 | 0.7                              | 2.2          | 100%                     | 100%                      |
| A14                                                           | Oct   | 15    | 3                  | 1.9                | 0.3                               | 4.2                 | 3.0                 | 0.3                              | 2.8          | 100%                     | 100%                      |
|                                                               | Nov   |       | 3                  | 2.4                | 0.3                               | 4.9                 | 3.4                 | 0.3                              | 3.1          | 100%                     | 100%                      |
|                                                               | Dec   |       | 3                  | 1.1                | 0.5                               | 3.6                 | 1.9                 | 0.4                              | 2.0          | 100%                     | 100%                      |
| A15                                                           | Oct   | 15    | 3                  | 1.1                | 0.3                               | 3.8                 | 2.4                 | 0.3                              | 2.1          | 100%                     | 100%                      |
|                                                               | Nov   |       | 3                  | 1.5                | 0.3                               | 4.6                 | 2.3                 | 0.4                              | 2.1          | 100%                     | 100%                      |
|                                                               | Dec   |       | 5                  | 1.6                | 1.0                               | 8.1                 | 2.2                 | 2.0                              | 2.8          | 100%                     | 100%                      |
| A16                                                           | Oct   | 15    | 3                  | 0.9                | 0.6                               | 4.5                 | 2.3                 | 0.6                              | 2.2          | 100%                     | 100%                      |
|                                                               | Nov   |       | 3                  | 1.6                | 0.3                               | 4.3                 | 2.5                 | 0.4                              | 2.4          | 100%                     | 100%                      |
|                                                               | Dec   |       | 3                  | 1.6                | 0.3                               | 3.3                 | 2.4                 | 0.3                              | 2.1          | 100%                     | 100%                      |

\*A2 ELV discussed with NRW as derogation

Signed on behalf of the Operator



Dated

02/01/19

Form I&S CEMS Parts 1 & 2

## RELEASES INTO AIR

Operational summary for quarter ending 31-Dec-18

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

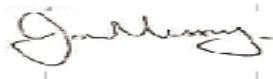
Permit: BL7108 / RP3730BV / BL7108IM (V009)

Release Points: A10A & A63

| PARTICULATE MATTER (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING |       |             |                                                           |                    |                                   |                     |                     |                                  |              |                          |                           |
|---------------------------------------------------------------|-------|-------------|-----------------------------------------------------------|--------------------|-----------------------------------|---------------------|---------------------|----------------------------------|--------------|--------------------------|---------------------------|
| Release point                                                 | Month | Limit       | Maximum daily mean                                        | Minimum daily mean | Standard deviation of daily means | Maximum hourly mean | Minimum hourly mean | Standard deviation of hour means | Monthly mean | abatement availability % | % data capture over month |
| A10A                                                          | Oct   | 15          | 1.2                                                       | 0.6                | 0.4                               | 6.2                 | 0.7                 | 0.4                              | 0.8          | 100%                     | 100%                      |
|                                                               | Nov   | Daily mean  | 1.0                                                       | 0.0                | 0.4                               | 7.5                 | 0.0                 | 0.5                              | 0.5          | 100%                     | 100%                      |
|                                                               | Dec   |             | 1.4                                                       | 0.0                | 0.2                               | 5.4                 | 0.0                 | 0.7                              | 0.7          | 100%                     | 100%                      |
| A63                                                           | Oct   | 25          | Inconsistent data during the period - to be investigated. |                    |                                   |                     |                     |                                  |              |                          |                           |
|                                                               | Nov   | Hourly mean |                                                           |                    |                                   |                     |                     |                                  |              |                          |                           |
|                                                               | Dec   |             |                                                           |                    |                                   |                     |                     |                                  |              |                          |                           |

Signed on behalf of the Operator

Dated 02/01/19



Form I&S CEMS Part 3

## RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

**Operator:** Port Talbot Works

**Location:** Port Talbot Works

**Permit:** BL7108 / RP3730BV

|              | NOx<br>(tonnes) | Lead<br>(tonnes) | PM10<br>(tonnes) | CO2<br>(k tonnes) |
|--------------|-----------------|------------------|------------------|-------------------|
| Morfa        | 310             |                  |                  |                   |
| Iron & Steel | 490             | 1.3              | 271              | 1014              |
| Total        | 799             | 1.3              | 271              | 1014              |

**Signed on behalf of the Operator**

**Dated** 11/01/19



**Form KPI**

## RELEASES INTO AIR

Operational Summary for quarter ending 31-Dec-18

**Operator:** Tata Steel Strip Products UK

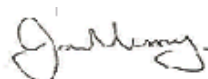
**Location:** Port Talbot Works

**Permit:** BL7108

**Release Points:**

| PARTICULATE MATTER (DISCONTINUOUS MONITORING) |                    |                                                    |
|-----------------------------------------------|--------------------|----------------------------------------------------|
| <b>Release Point</b>                          | A6                 | No Data available for A7 due to furnace not active |
| Time and date of sampling                     | 15-Oct-18<br>10:41 |                                                    |
| Flowrate (Nm3/hr)                             | 218,350            |                                                    |
| Particulate measured conc. (mg/Nm3)           | 1.7<br>(+/-1.0)    |                                                    |
| Particulate limit (mg/Nm3)                    | 10                 |                                                    |
| Sampling method used                          | BS EN 13284        |                                                    |
| Analytical method used                        | Gravimetric        |                                                    |
| <b>Fuel Usage</b>                             |                    |                                                    |
| Natural gas (%)                               | 3%                 |                                                    |
| BF gas (%)                                    | 69%                |                                                    |
| Coke oven gas (%)                             | 7%                 |                                                    |
| BOS (%)                                       | 22%                |                                                    |

**Signed on behalf of the Operator**



**Dated**

20/12/2018

**Form Blast Furnace DCM Part**

## RELEASES INTO AIR

Operational summary for the six months to 31/12/2018

**Operator:** Tata Steel Strip Products UK

**Location:** Port Talbot Works

**Permit:** BL7108 / RP3730BV

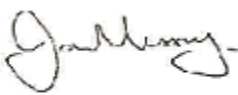
**Release Points:** A39

| PARTICULATE MATTER (DISCONTINUOUS MONITORING) |                    |  |
|-----------------------------------------------|--------------------|--|
| <b>Release Point</b>                          | A39<br>HY2         |  |
| Time and date of sampling                     | 26-Nov-18<br>10:55 |  |
| Flowrate (Nm3/hr)                             | 30635              |  |
| Particulate measured conc. (mg/Nm3)           | 13                 |  |
| Particulate limit (mg/Nm3)                    | 25                 |  |
| Sampling method used                          | BS EN 13284        |  |
| Analytical method used                        | Gravimetric        |  |

**Form GCI DCM Part**

**Signed on behalf of the Operator**

**Dated** 20/12/2018

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# RELEASES INTO AIR

Operational Summary for the month Dec-2018

Operator: Tata Steel UK Ltd

Permit: BL7108 / RP3730BV

Location: Port Talbot Works

Release Point: A1

| Day        | % max throughput | % data capture | % EP availability | % UIT availability | Sinter Blend       |                     |                    | Daily average | Particulate Matter (mg/m3) |      |         |                    |                |      |         |                    |
|------------|------------------|----------------|-------------------|--------------------|--------------------|---------------------|--------------------|---------------|----------------------------|------|---------|--------------------|----------------|------|---------|--------------------|
|            |                  |                |                   |                    | Mean sulphur % w/w | Mean chloride % w/w | Mean reverts % w/w |               | 4 hour rolling average     |      |         |                    | Hourly average |      |         |                    |
|            |                  |                |                   |                    |                    |                     |                    |               | Maximum                    | Mean | Minimum | Standard deviation | Maximum        | Mean | Minimum | Standard deviation |
| 01-Dec-18  | 59               | 100%           | 100%              | 83%                | 0.0169             | 0.023               | 10.27%             | 55            | 74                         | 55   | 35      | 12                 | 145            | 55   | 27      | 26                 |
| 02-Dec-18  | 59               | 100%           | 100%              | 14%                | 0.0183             | 0.015               | 10.49%             | 51            | 90                         | 50   | 16      | 25                 | 123            | 51   | 0       | 34                 |
| 03-Dec-18  | 61               | 100%           | 100%              | 11%                | 0.0183             | 0.015               | 10.49%             | 45            | 57                         | 46   | 30      | 7                  | 82             | 45   | 0       | 16                 |
| 04-Dec-18  | 46               | 100%           | 100%              | 31%                | 0.0183             | 0.015               | 10.49%             | 44            | 74                         | 44   | 16      | 17                 | 114            | 44   | 0       | 30                 |
| 05-Dec-18  | 49               | 100%           | 100%              | 28%                | 0.0183             | 0.015               | 10.49%             | 28            | 51                         | 28   | 0       | 16                 | 67             | 28   | 0       | 19                 |
| 06-Dec-18  | 58               | 100%           | 100%              | 15%                | 0.0183             | 0.015               | 10.49%             | 45            | 66                         | 44   | 10      | 15                 | 74             | 45   | 0       | 22                 |
| 07-Dec-18  | 46               | 100%           | 100%              | 33%                | 0.0183             | 0.015               | 10.49%             | 21            | 66                         | 23   | 0       | 24                 | 76             | 21   | 0       | 28                 |
| 08-Dec-18  | 39               | 100%           | 100%              | 44%                | 0.0183             | 0.015               | 10.49%             | 11            | 27                         | 10   | 0       | 10                 | 55             | 11   | 0       | 16                 |
| 09-Dec-18  | 39               | 100%           | 100%              | 46%                | 0.0195             | 0.021               | 8.65%              | 21            | 37                         | 20   | 0       | 11                 | 68             | 21   | 0       | 20                 |
| 10-Dec-18  | 11               | 100%           | 100%              | 85%                | 0.0195             | 0.021               | 8.65%              | 7             | 36                         | 8    | 0       | 11                 | 46             | 7    | 0       | 12                 |
| 11-Dec-18  | 47               | 100%           | 100%              | 49%                | 0.0195             | 0.021               | 8.65%              | 26            | 42                         | 25   | 6       | 10                 | 74             | 26   | 0       | 19                 |
| 12-Dec-18  | 51               | 100%           | 100%              | 100%               | 0.0195             | 0.021               | 8.65%              | 51            | 92                         | 51   | 0       | 19                 | 140            | 51   | 0       | 35                 |
| 13-Dec-18  | 39               | 100%           | 100%              | 100%               | 0.0195             | 0.021               | 8.65%              | 31            | 47                         | 32   | 12      | 9                  | 109            | 31   | 0       | 25                 |
| 14-Dec-18  | 1                | 100%           | 100%              | 100%               | 0.0195             | 0.021               | 8.65%              | 1             | 30                         | 3    | 0       | 8                  | 17             | 1    | 0       | 4                  |
| 15-Dec-18  | 36               | 100%           | 100%              | 100%               | 0.0195             | 0.021               | 8.65%              | 49            | 114                        | 48   | 0       | 33                 | 226            | 49   | 0       | 59                 |
| 16-Dec-18  | 52               | 100%           | 100%              | 100%               | 0.0195             | 0.021               | 8.65%              | 47            | 79                         | 42   | 0       | 29                 | 82             | 47   | 0       | 30                 |
| 17-Dec-18  | 59               | 100%           | 100%              | 100%               | 0.0201             | 0.058               | 9.93%              | 60            | 86                         | 63   | 34      | 16                 | 90             | 60   | 7       | 21                 |
| 18-Dec-18  | 34               | 100%           | 100%              | 100%               | 0.0201             | 0.058               | 9.93%              | 15            | 37                         | 16   | 1       | 11                 | 65             | 15   | 0       | 17                 |
| 19-Dec-18  | 6                | 100%           | 100%              | 100%               | 0.0201             | 0.058               | 9.93%              | 2             | 13                         | 3    | 0       | 4                  | 17             | 2    | 0       | 4                  |
| 20-Dec-18  | 57               | 100%           | 100%              | 100%               | 0.0201             | 0.058               | 9.93%              | 22            | 31                         | 20   | 0       | 8                  | 47             | 22   | 0       | 10                 |
| 21-Dec-18  | 59               | 100%           | 100%              | 100%               | 0.0201             | 0.058               | 9.93%              | 25            | 33                         | 25   | 13      | 5                  | 46             | 25   | 0       | 10                 |
| 22-Dec-18  | 53               | 100%           | 100%              | 100%               | 0.0201             | 0.058               | 9.93%              | 29            | 44                         | 29   | 9       | 10                 | 53             | 29   | 0       | 14                 |
| 23-Dec-18  | 31               | 100%           | 100%              | 100%               | 0.0201             | 0.058               | 9.93%              | 11            | 30                         | 12   | 0       | 9                  | 57             | 11   | 0       | 13                 |
| 24-Dec-18  | 37               | 100%           | 100%              | 100%               | 0.0201             | 0.058               | 9.93%              | 17            | 31                         | 17   | 0       | 10                 | 36             | 17   | 0       | 13                 |
| 25-Dec-18  | 66               | 100%           | 100%              | 100%               | 0.0191             | 0.026               | 9.86%              | 33            | 48                         | 34   | 25      | 8                  | 56             | 33   | 8       | 10                 |
| 26-Dec-18  | 54               | 100%           | 100%              | 100%               | 0.0191             | 0.026               | 9.86%              | 32            | 56                         | 32   | 10      | 13                 | 66             | 32   | 0       | 17                 |
| 27-Dec-18  | 30               | 100%           | 100%              | 100%               | 0.0191             | 0.026               | 9.86%              | 12            | 24                         | 12   | 0       | 7                  | 39             | 12   | 0       | 12                 |
| 28-Dec-18  | 51               | 100%           | 100%              | 100%               | 0.0191             | 0.026               | 9.86%              | 21            | 33                         | 20   | 3       | 9                  | 65             | 21   | 0       | 14                 |
| 29-Dec-18  | 42               | 100%           | 100%              | 97%                | 0.0191             | 0.026               | 9.86%              | 14            | 33                         | 14   | 1       | 7                  | 46             | 14   | 0       | 12                 |
| 30-Dec-18  | 33               | 100%           | 100%              | 100%               | 0.0191             | 0.026               | 9.86%              | 15            | 29                         | 15   | 0       | 9                  | 68             | 15   | 0       | 17                 |
| 31-Dec-18  | 14               | 100%           | 100%              | 100%               | 0.0191             | 0.026               | 9.86%              | 15            | 32                         | 7    | 0       | 12                 | 35             | 6    | 0       | 12                 |
|            |                  |                |                   |                    |                    |                     |                    |               |                            |      |         |                    |                |      |         |                    |
| Month ave  | 43               | 100%           | 100%              | 79%                | 0.02               | 0.03                | 0.1                | 28            | -                          | 27   | -       | -                  | -              | 27   | -       | -                  |
| Month max. | 66               | -              | -                 | -                  | 0.02               | 0.06                | 0.1                | 60            | 114                        | -    | -       | -                  | 226            | -    | -       | -                  |
| Limit      | -                | -              | -                 | -                  | 0.06               | -                   | -                  | 40            | -                          | -    | -       | -                  | -              | -    | -       | -                  |

\* No data available.

Signed on behalf of the Operator

Dated 10/01/2019

Form Sinter CEMS

# RELEASES INTO AIR

Operational Summary for the month Nov-2018

Operator: Tata Steel UK Ltd

Permit: BL7108 / RP3730BV

Location: Port Talbot Works

Release Point: A1

| Day        | % max throughput | % data capture | % EP availability | % UIT availability | Sinter Blend       |                     |                    | Particulate Matter (mg/m3) |                        |      |         |                    |                |      |         |                    |
|------------|------------------|----------------|-------------------|--------------------|--------------------|---------------------|--------------------|----------------------------|------------------------|------|---------|--------------------|----------------|------|---------|--------------------|
|            |                  |                |                   |                    | Mean sulphur % w/w | Mean chloride % w/w | Mean reverts % w/w | Daily average              | 4 hour rolling average |      |         |                    | Hourly average |      |         |                    |
|            |                  |                |                   |                    |                    |                     |                    |                            | Maximum                | Mean | Minimum | Standard deviation | Maximum        | Mean | Minimum | Standard deviation |
| 01-Nov-18  | 0                | 100%           | 100%              | 100%               | 0.0168             | 0.029               | 11.09%             | 0                          | 0                      | 0    | 0       | 0                  | 0              | 0    | 0       | 0                  |
| 02-Nov-18  | 30               | 100%           | 100%              | 100%               | 0.0168             | 0.029               | 11.09%             | 33                         | 105                    | 32   | 1       | 31                 | 151            | 33   | 0       | 38                 |
| 03-Nov-18  | 67               | 100%           | 100%              | 100%               | 0.0168             | 0.029               | 11.09%             | 65                         | 78                     | 63   | 30      | 13                 | 85             | 65   | 38      | 13                 |
| 04-Nov-18  | 68               | 100%           | 100%              | 100%               | 0.0168             | 0.029               | 11.09%             | 68                         | 76                     | 68   | 57      | 5                  | 92             | 68   | 45      | 11                 |
| 05-Nov-18  | 56               | 100%           | 100%              | 100%               | 0.0168             | 0.029               | 11.09%             | 70                         | 99                     | 73   | 21      | 24                 | 125            | 70   | 0       | 35                 |
| 06-Nov-18  | 55               | 100%           | 100%              | 99%                | 0.0168             | 0.029               | 11.09%             | 45                         | 67                     | 45   | 17      | 12                 | 83             | 45   | 0       | 21                 |
| 07-Nov-18  | 55               | 100%           | 100%              | 100%               | 0.0162             | 0.024               | 10.90%             | 24                         | 66                     | 27   | 0       | 27                 | 74             | 24   | 0       | 30                 |
| 08-Nov-18  | 49               | 100%           | 100%              | 100%               | 0.0162             | 0.024               | 10.90%             | 15                         | 44                     | 14   | 0       | 13                 | 54             | 15   | 0       | 18                 |
| 09-Nov-18  | 44               | 100%           | 100%              | 94%                | 0.0162             | 0.024               | 10.90%             | 22                         | 44                     | 23   | 0       | 14                 | 52             | 22   | 0       | 18                 |
| 10-Nov-18  | 30               | 100%           | 100%              | 100%               | 0.0162             | 0.024               | 10.90%             | 22                         | 62                     | 22   | 0       | 22                 | 89             | 22   | 0       | 25                 |
| 11-Nov-18  | 0                | 100%           | 100%              | 100%               | 0.0162             | 0.024               | 10.90%             | 1                          | 5                      | 0    | 0       | 1                  | 21             | 1    | 0       | 4                  |
| 12-Nov-18  | 51               | 100%           | 100%              | 78%                | 0.0162             | 0.024               | 10.90%             | 36                         | 64                     | 35   | 10      | 12                 | 91             | 36   | 0       | 23                 |
| 13-Nov-18  | 40               | 100%           | 100%              | 44%                | 0.0162             | 0.024               | 10.90%             | 20                         | 35                     | 21   | 9       | 7                  | 55             | 20   | 0       | 17                 |
| 14-Nov-18  | 50               | 100%           | 100%              | 27%                | 0.0162             | 0.024               | 10.90%             | 54                         | 181                    | 46   | 2       | 48                 | 215            | 54   | 0       | 62                 |
| 15-Nov-18  | 43               | 100%           | 100%              | 76%                | 0.0162             | 0.024               | 10.90%             | 48                         | 123                    | 51   | 0       | 37                 | 131            | 48   | 0       | 39                 |
| 16-Nov-18  | 52               | 100%           | 100%              | 100%               | 0.0162             | 0.024               | 10.90%             | 50                         | 80                     | 53   | 17      | 21                 | 115            | 50   | 0       | 27                 |
| 17-Nov-18  | 55               | 100%           | 100%              | 100%               | 0.0165             | 0.029               | 10.94%             | 32                         | 48                     | 33   | 9       | 11                 | 65             | 32   | 0       | 18                 |
| 18-Nov-18  | 47               | 100%           | 100%              | 96%                | 0.0165             | 0.029               | 10.94%             | 26                         | 46                     | 25   | 7       | 10                 | 65             | 26   | 0       | 18                 |
| 19-Nov-18  | 40               | 100%           | 100%              | 98%                | 0.0165             | 0.029               | 10.94%             | 42                         | 99                     | 42   | 4       | 27                 | 115            | 42   | 0       | 36                 |
| 20-Nov-18  | 20               | 100%           | 100%              | 100%               | 0.0165             | 0.029               | 10.94%             | 24                         | 89                     | 28   | 0       | 36                 | 113            | 24   | 0       | 38                 |
| 21-Nov-18  | 37               | 100%           | 100%              | 100%               | 0.0165             | 0.029               | 10.94%             | 40                         | 74                     | 39   | 0       | 25                 | 98             | 40   | 0       | 30                 |
| 22-Nov-18  | 51               | 100%           | 100%              | 100%               | 0.0165             | 0.029               | 10.94%             | 40                         | 64                     | 40   | 11      | 16                 | 106            | 40   | 0       | 25                 |
| 23-Nov-18  | 60               | 100%           | 100%              | 100%               | 0.0165             | 0.029               | 10.94%             | 68                         | 98                     | 64   | 28      | 18                 | 119            | 68   | 23      | 23                 |
| 24-Nov-18  | 56               | 100%           | 100%              | 100%               | 0.0169             | 0.023               | 10.27%             | 81                         | 112                    | 83   | 61      | 16                 | 122            | 81   | 36      | 24                 |
| 25-Nov-18  | 35               | 100%           | 100%              | 100%               | 0.0169             | 0.023               | 10.27%             | 40                         | 86                     | 40   | 0       | 27                 | 158            | 40   | 0       | 39                 |
| 26-Nov-18  | 43               | 100%           | 100%              | 100%               | 0.0169             | 0.023               | 10.27%             | 45                         | 80                     | 45   | 7       | 22                 | 94             | 45   | 0       | 29                 |
| 27-Nov-18  | 50               | 100%           | 100%              | 100%               | 0.0169             | 0.023               | 10.27%             | 38                         | 55                     | 40   | 16      | 11                 | 82             | 38   | 0       | 18                 |
| 28-Nov-18  | 58               | 100%           | 100%              | 100%               | 0.0169             | 0.023               | 10.27%             | 61                         | 78                     | 59   | 34      | 12                 | 117            | 61   | 27      | 19                 |
| 29-Nov-18  | 19               | 100%           | 100%              | 100%               | 0.0169             | 0.023               | 10.27%             | 33                         | 111                    | 29   | 0       | 36                 | 232            | 33   | 0       | 59                 |
| 30-Nov-18  | 60               | 100%           | 100%              | 100%               | 0.0169             | 0.023               | 10.27%             | 49                         | 111                    | 53   | 31      | 15                 | 79             | 49   | 0       | 17                 |
|            |                  |                |                   |                    |                    |                     |                    |                            |                        |      |         |                    |                |      |         |                    |
|            |                  |                |                   |                    |                    |                     |                    |                            |                        |      |         |                    |                |      |         |                    |
| Month ave  | 44               | 100%           | 100%              | 94%                | 0.02               | 0.03                | 0.1                | 40                         | -                      | 40   | -       | -                  | -              | 40   | -       | -                  |
| Month max. | 68               | -              | -                 | -                  | 0.02               | 0.03                | 0.1                | 81                         | 181                    | -    | -       | -                  | 232            | -    | -       | -                  |
| Limit      | -                | -              | -                 | -                  | 0.06               | -                   | -                  | 40                         | -                      | -    | -       | -                  | -              | -    | -       | -                  |

\* No data available.

Signed on behalf of the Operator

Dated 11/01/2019

Form Sinter CEMS

# RELEASES INTO AIR

Operational Summary for the month Oct-2018

Operator: Tata Steel UK Ltd

Permit: BL7108 / RP3730BV

Location: Port Talbot Works

Release Point: A1

| Day        | % max throughput | % data capture | % EP availability | % UJT availability | Sinter Blend       |                     |                    | Daily average | Particulate Matter (mg/m3) |      |         |                    |                |      |         |                    |
|------------|------------------|----------------|-------------------|--------------------|--------------------|---------------------|--------------------|---------------|----------------------------|------|---------|--------------------|----------------|------|---------|--------------------|
|            |                  |                |                   |                    | Mean sulphur % w/w | Mean chloride % w/w | Mean reverts % w/w |               | 4 hour rolling average     |      |         |                    | Hourly average |      |         |                    |
|            |                  |                |                   |                    |                    |                     |                    |               | Maximum                    | Mean | Minimum | Standard deviation | Maximum        | Mean | Minimum | Standard deviation |
| 01-Oct-18  | 68               | 100%           | 100%              | 10%                | 0.0222             |                     | 13.59%             | 49            | 58                         | 49   | 36      | 6                  | 76             | 49   | 18      | 12                 |
| 02-Oct-18  | 15               | 100%           | 100%              | 83%                | 0.0222             |                     | 13.59%             | 33            | 113                        | 23   | 0       | 33                 | 297            | 33   | 0       | 70                 |
| 03-Oct-18  | 57               | 100%           | 100%              | 26%                | 0.0222             |                     | 13.59%             | 42            | 132                        | 52   | 2       | 37                 | 165            | 42   | 0       | 36                 |
| 04-Oct-18  | 55               | 100%           | 100%              | 28%                | 0.0222             |                     | 13.59%             | 22            | 36                         | 23   | 2       | 10                 | 48             | 22   | 0       | 13                 |
| 05-Oct-18  | 65               | 100%           | 100%              | 4%                 | 0.0176             |                     | 11.52%             | 18            | 30                         | 18   | 12      | 5                  | 38             | 18   | 11      | 7                  |
| 06-Oct-18  | 67               | 100%           | 100%              | 3%                 | 0.0176             |                     | 11.52%             | 25            | 54                         | 23   | 14      | 12                 | 100            | 25   | 12      | 18                 |
| 07-Oct-18  | 58               | 100%           | 100%              | 20%                | 0.0176             |                     | 11.52%             | 19            | 57                         | 22   | 0       | 23                 | 81             | 19   | 0       | 25                 |
| 08-Oct-18  | 46               | 100%           | 100%              | 40%                | 0.0176             |                     | 11.52%             | 8             | 27                         | 7    | 0       | 10                 | 41             | 8    | 0       | 12                 |
| 09-Oct-18  | 31               | 100%           | 100%              | 59%                | 0.0176             |                     | 11.52%             | 14            | 47                         | 15   | 0       | 16                 | 67             | 14   | 0       | 20                 |
| 10-Oct-18  | 52               | 100%           | 100%              | 38%                | 0.0176             |                     | 11.52%             | 27            | 44                         | 27   | 0       | 15                 | 63             | 27   | 0       | 20                 |
| 11-Oct-18  | 1                | 100%           | 100%              | 100%               | 0.0176             |                     | 11.52%             | 0             | 0                          | 0    | 0       | 0                  | 0              | 0    | 0       | 0                  |
| 12-Oct-18  | 39               | 100%           | 100%              | 50%                | 0.0176             |                     | 11.52%             | 16            | 44                         | 14   | 0       | 15                 | 82             | 16   | 0       | 19                 |
| 13-Oct-18  | 37               | 100%           | 100%              | 49%                | 0.0163             | 0.028               | 12.17%             | 15            | 34                         | 15   | 3       | 8                  | 41             | 15   | 0       | 13                 |
| 14-Oct-18  | 60               | 100%           | 100%              | 20%                | 0.0163             | 0.028               | 12.17%             | 33            | 47                         | 31   | 7       | 13                 | 64             | 33   | 0       | 17                 |
| 15-Oct-18  | 39               | 100%           | 100%              | 51%                | 0.0163             | 0.028               | 12.17%             | 20            | 47                         | 22   | 0       | 18                 | 53             | 20   | 0       | 19                 |
| 16-Oct-18  | 42               | 100%           | 100%              | 46%                | 0.0163             | 0.028               | 12.17%             | 14            | 29                         | 14   | 0       | 9                  | 32             | 14   | 0       | 12                 |
| 17-Oct-18  | 27               | 100%           | 100%              | 65%                | 0.0163             | 0.028               | 12.17%             | 17            | 50                         | 17   | 0       | 18                 | 71             | 17   | 0       | 23                 |
| 18-Oct-18  | 73               | 100%           | 100%              | 33%                | 0.0163             | 0.028               | 12.17%             | 43            | 69                         | 40   | 19      | 12                 | 74             | 43   | 6       | 17                 |
| 19-Oct-18  | 46               | 100%           | 100%              | 100%               | 0.0163             | 0.028               | 12.17%             | 29            | 69                         | 33   | 1       | 21                 | 73             | 29   | 0       | 25                 |
| 20-Oct-18  | 48               | 100%           | 100%              | 100%               | 0.0163             | 0.028               | 12.17%             | 31            | 69                         | 28   | 0       | 23                 | 79             | 31   | 0       | 26                 |
| 21-Oct-18  | 45               | 100%           | 100%              | 100%               | 0.0166             | 0.024               | 10.55%             | 31            | 72                         | 30   | 0       | 23                 | 90             | 31   | 0       | 28                 |
| 22-Oct-18  | 39               | 100%           | 100%              | 100%               | 0.0166             | 0.024               | 10.55%             | 57            | 131                        | 57   | 0       | 37                 | 169            | 57   | 0       | 51                 |
| 23-Oct-18  | 23               | 100%           | 100%              | 100%               | 0.0166             | 0.024               | 10.55%             | 20            | 66                         | 24   | 0       | 28                 | 74             | 20   | 0       | 29                 |
| 24-Oct-18  | 31               | 100%           | 100%              | 100%               | 0.0166             | 0.024               | 10.55%             | 28            | 58                         | 28   | 0       | 16                 | 72             | 28   | 0       | 24                 |
| 25-Oct-18  | 37               | 100%           | 100%              | 100%               | 0.0166             | 0.024               | 10.55%             | 50            | 111                        | 50   | 0       | 34                 | 135            | 50   | 0       | 42                 |
| 26-Oct-18  | 37               | 100%           | 100%              | 100%               | 0.0166             | 0.024               | 10.55%             | 39            | 70                         | 37   | 0       | 27                 | 90             | 39   | 0       | 32                 |
| 27-Oct-18  | 39               | 100%           | 100%              | 100%               | 0.0166             | 0.024               | 10.55%             | 39            | 88                         | 41   | 0       | 23                 | 104            | 39   | 0       | 34                 |
| 28-Oct-18  | 12               | 100%           | 100%              | 81%                | 0.0166             | 0.024               | 10.55%             | 11            | 52                         | 11   | 0       | 17                 | 107            | 11   | 0       | 24                 |
| 29-Oct-18  | 34               | 100%           | 100%              | 81%                | 0.0166             | 0.024               | 10.55%             | 44            | 127                        | 41   | 0       | 37                 | 238            | 44   | 0       | 51                 |
| 30-Oct-18  | 45               | 100%           | 100%              | 100%               | 0.0166             | 0.024               | 10.55%             | 34            | 60                         | 33   | 0       | 19                 | 82             | 34   | 0       | 26                 |
| 31-Oct-18  | 64               | 100%           | 100%              | 100%               | 0.017              | 0.029               | 11.09%             | 57            | 73                         | 50   | 33      | 13                 | 89             | 50   | 23      | 16                 |
|            |                  |                |                   |                    |                    |                     |                    |               |                            |      |         |                    |                |      |         |                    |
| Month ave  | 43               | 100%           | 100%              | 64%                | 0.02               | 0.03                | 0.1                | 28            | -                          | 28   | -       | -                  | -              | 28   | -       | -                  |
| Month max. | 73               | -              | -                 | -                  | 0.02               | 0.03                | 0.1                | 57            | 132                        | -    | -       | -                  | 297            | -    | -       | -                  |
| Limit      | -                | -              | -                 | -                  | 0.06               | -                   | -                  | 40            | -                          | -    | -       | -                  | -              | -    | -       | -                  |

\* No data available.

Signed on behalf of the Operator

Dated 11/01/2019

Form Sinter CEMS

## RELEASES INTO AIR

Operational summary for the six months to 31/12/2018

**Operator:** Tata Steel Strip Products UK

**Location:** Port Talbot Works

**Permit:** BL7108 / RP3730BV

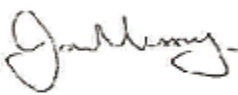
**Release Points:** A39

| PARTICULATE MATTER (DISCONTINUOUS MONITORING) |                    |  |
|-----------------------------------------------|--------------------|--|
| <b>Release Point</b>                          | A39<br>HY2         |  |
| Time and date of sampling                     | 26-Nov-18<br>10:55 |  |
| Flowrate (Nm3/hr)                             | 30635              |  |
| Particulate measured conc. (mg/Nm3)           | 13                 |  |
| Particulate limit (mg/Nm3)                    | 25                 |  |
| Sampling method used                          | BS EN 13284        |  |
| Analytical method used                        | Gravimetric        |  |

**Form GCI DCM Part**

**Signed on behalf of the Operator**

**Dated** 18/12/2018

---

| Liquid Iron Plating Operations (Iron Plating Pit) |       |        |                    |
|---------------------------------------------------|-------|--------|--------------------|
| Date                                              | Time  | Tonnes | Reason             |
| 28/06/15                                          | 00:49 | 240    | Metallurgy Reasons |
| 28/06/15                                          | 00:16 | 209    | Metallurgy Reasons |
| 27/06/15                                          | 15:46 | 25     | Metallurgy Reasons |
| 25/06/15                                          | 06:01 | 228    | Metallurgy Reasons |
| 25/06/15                                          | 05:30 | 237    | Metallurgy Reasons |
| 25/06/15                                          | 00:42 | 228    | Metallurgy Reasons |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
|                                                   |       |        |                    |
| Total                                             |       | 1167   |                    |

0

Form I&S Operational 1

Dated

17/01/19

# RELEASES INTO AIR

Operational summary for the six months to

31-Dec-18

Operator: Tata Steel UK Ltd

Release Point: A1

Location: Port Talbot Works

Permit: BL7108

| Release Point                                               | Sinter Main (A1)                      |                      |                  |                   |                     |                       |                         |                     |
|-------------------------------------------------------------|---------------------------------------|----------------------|------------------|-------------------|---------------------|-----------------------|-------------------------|---------------------|
|                                                             | Chloride<br>(mg/Nm3)                  | Fluoride<br>(mg/Nm3) | Lead<br>(mg/Nm3) | VOC's<br>(mg/Nm3) | PAH's *<br>(ug/Nm3) | Dioxins**<br>(ng/Nm3) | Dioxins ***<br>(ng/Nm3) | Mercury<br>(mg/Nm3) |
| Permit limit                                                |                                       |                      |                  |                   |                     | 0.4                   |                         | 0.05                |
| Measured conc. according to condition 10.1.3b               | No Longer a requirement in the permit |                      |                  |                   | 286.5<br>(+/- 0.63) | 0.77<br>(+/- 0.13)    | 0.80<br>(+/- 0.01)      | 0.01<br>(+/-0.0119) |
| Measured oxygen (%)                                         |                                       |                      |                  |                   | 17.0                | 17.0                  | 17.0                    | 17.0                |
| Measured conc. according to condition 10.1.3a (17%O2)       |                                       |                      |                  |                   | 286.5               | 0.8                   | 0.8                     | 0.01                |
| Cogeners<LoD at zero                                        |                                       |                      |                  |                   |                     | 0.77                  | 0.80                    |                     |
| Cogeners<LoD at LoD                                         |                                       |                      |                  |                   |                     | 0.77                  | 0.80                    |                     |
| Analytical method used                                      |                                       |                      |                  |                   | BS ISO 11338        | BS EN 1948            | BS EN 1948              | BS EN 13211         |
| Date of sampling                                            |                                       |                      |                  |                   | 27-Mar-18           | 27-Mar-18             | 27-Mar-18               | 28-Mar-18           |
| Sample start time                                           |                                       |                      |                  |                   | 11:46               | 11:45                 | 11:45                   | 09:34               |
| Sample end time                                             |                                       |                      |                  |                   | 17:20               | 17:02                 | 17:02                   | 11:54               |
| Limit of detection                                          |                                       |                      |                  |                   | 0.6                 | 0.001                 | 0.001                   | 0.090               |
| Continuous particulate result during sampling (hourly mean) |                                       |                      |                  |                   | 8                   | 8                     | 8                       | 12                  |
| <b>Process status at time of sam</b>                        |                                       |                      |                  |                   |                     |                       |                         |                     |
| Mean sulphur content of sinter blend in use (%)             |                                       |                      |                  |                   | 0.026               | 0.026                 | 0.026                   | 0.026               |
| Reverts content of sinter blend in use (%)                  |                                       |                      |                  |                   | 11.5                | 11.5                  | 11.5                    | 11.5                |
| Mean chloride content of sinter blend in use (%)            |                                       |                      |                  |                   | 0.018               | 0.018                 | 0.018                   | 0.018               |
| Throughput during sampling period (% of maximum)            |                                       |                      |                  |                   | 58                  | 58                    | 58                      | 58                  |

\* PAH's as B[a]P

\*\* Dioxins and furans as iTEQ

\*\*\* Dioxins and furans as WHO TEQ

# - Data not available from labs as samples were not received for analysis. This has been investigated and an improvement has been put in place to resolve this issue.

Nb: Dioxins and Furans iTEQ ng/m3 Limit on average of all extractive spot sample carried out by the operator during a single calendar year.  
Average of all extractive spot samples in 2016 - 0.3875ng/Nm3

Signed on behalf of the Operator

Dated

02/01/2019

Form Sinter DCM 2

# RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-18

Operator: Tata Steel UK Ltd  
Location: Port Talbot Works  
Permit: BL7108 / RP3730BV

| Iron Ore Sintering - Record of strand stoppages > 30 minutes |       |                 |                           |                                                                                                                                                                                                     |
|--------------------------------------------------------------|-------|-----------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date                                                         | Time  | Duration (mins) | Planned/                  | Reason                                                                                                                                                                                              |
| 01-Oct-18                                                    | Start | 80m             | Unplanned                 |                                                                                                                                                                                                     |
| 01-Oct-18                                                    | 10:44 | 50m             | Mechanical                | delay to remove section of conveyor belt jammed in roll feeder                                                                                                                                      |
| 01-Oct-18                                                    | 10:44 | 53m             | Mechanical                | delay to calibrate limestone weigh feeder                                                                                                                                                           |
| 01-Oct-18                                                    | 11:37 | 19h 4m          | Planned Maintenance       | Planned maintenance                                                                                                                                                                                 |
| 02-Oct-18                                                    | 04:00 | 5h 33m          | Operational               | stock pile full and high line bunkers full                                                                                                                                                          |
| 02-Oct-18                                                    | 23:57 | 25m             | Mechanical                | pallet change No number off and "C" on                                                                                                                                                              |
| 03-Oct-18                                                    | 13:24 | 4h 33m          | Mechanical                | repairs to half flex                                                                                                                                                                                |
| 04-Oct-18                                                    | 10:18 | 16m             | Electrical                | unable to get any weigh feeders to run. Tied in to repair work on No6 weigh feeder.                                                                                                                 |
| 04-Oct-18                                                    | 14:59 | 30m             | Electrical                | delay for cooler wheel detector, extended due to electrical mobility down blender and harbour                                                                                                       |
| 04-Oct-18                                                    | 17:02 | 35m             | Mechanical                | Pallet change for hole, 3 off, and 9 on.                                                                                                                                                            |
| 05-Oct-18                                                    | 21:44 | 20m             | Mechanical                | 39 off no number on pallet which went on                                                                                                                                                            |
| 05-Oct-18                                                    | 07:04 | 17m             | Electrical                | Screen dropped out electrical required to reset.                                                                                                                                                    |
| 05-Oct-18                                                    | 08:30 | 51m             | Mechanical                | Pallet change 123 off 51 on Another pallet off due to pressure rollers u/s                                                                                                                          |
| 07-Oct-18                                                    | 08:00 | 3h 16m          | Mechanical                | Repairs made to deck                                                                                                                                                                                |
| 07-Oct-18                                                    | 11:46 | 9h 17m          | Operational               | Stockpile full Single Blast Furnace operation.                                                                                                                                                      |
| 08-Oct-18                                                    | 08:46 | 15h 3m          | Operational               | Requirement stop take due to hi-line and stock pile levels. Single furnace operation                                                                                                                |
| 09-Oct-18                                                    | 09:45 | 40h 54m         | Operational               | Requirement stop taken due to stock pile and hi-line levels. Single furnace operation.                                                                                                              |
| 10-Oct-18                                                    | 18:22 | 20m             | Operational               | stopped to sinter through after filling strand.                                                                                                                                                     |
| 12-Oct-18                                                    | 10:12 | 38m             | Electrical                | issues getting cooler to come in                                                                                                                                                                    |
| 12-Oct-18                                                    | 10:32 | 20m             | Operational               | slam shut activated                                                                                                                                                                                 |
| 12-Oct-18                                                    | 11:10 | 16m             | Mechanical                | mixer failed to come in/swivel hydraulic alarm.                                                                                                                                                     |
| 12-Oct-18                                                    | 11:37 | 2h 59m          | Electrical                | No hv showing on No3 field, field spill. Demerger not cycling found first straight section spill and cleaned out on bottom along with u bend cleaned out found ceramic pieces in pipework.          |
| 13-Oct-18                                                    | 08:47 | 34m             | Operational               | um fines blocked chute alarm along with east feeder rpm issues running at 6.7 rpm indicating 300tph, chute checked found raw mix build up same cleaned run in speed control for remainder of shift. |
| 13-Oct-18                                                    | 09:53 | 38m             | Operational               | Loss of temps along strand giving poor sintering conditions.                                                                                                                                        |
| 13-Oct-18                                                    | 11:16 | 3h 4m           | Operational               | Chute blocked due to poor sintering conditions attempted to unblock, in the dockers called for to jet out.                                                                                          |
| 13-Oct-18                                                    | 13:56 | 1h 6m           | Operational               | return fines chute blocked with wet material                                                                                                                                                        |
| 13-Oct-18                                                    | 17:27 | 3h 28m          | Operational               | Stock pile levels along with hi lines bunkers being run down, to refill. Single furnace operation                                                                                                   |
| 14-Oct-18                                                    | 09:50 | 1h 10m          | Mechanical                | issues with rap on combustion air fan outlet pipe                                                                                                                                                   |
| 14-Oct-18                                                    | 21:09 | 8h 40m          | Operational               | 1028 stockpile full                                                                                                                                                                                 |
| 15-Oct-18                                                    | 08:20 | 2h 49m          | Operational               | BF bunkers healthy along 1028 con, stop taken to attempt to clear some material from 1028 overspill chute.                                                                                          |
| 16-Oct-18                                                    | 19:07 | 8h 2m           | Operational               | High stock levels and bunker levels                                                                                                                                                                 |
| 16-Oct-18                                                    | 07:33 | 1h 36m          | Mechanical                | A hole had to be patched in the fines feeder                                                                                                                                                        |
| 16-Oct-18                                                    | 17:24 | 15h 16m         | Operational               | Single BF operation                                                                                                                                                                                 |
| 17-Oct-18                                                    | 06:18 | 1h 28m          | Access to restricted area | Continuation of the hole patching of the return fines feeder                                                                                                                                        |
| 17-Oct-18                                                    | 19:00 | 12h 0m          | Operational               | No requirement due to one Blast Furnace operation.                                                                                                                                                  |
| 17-Oct-18                                                    | 07:00 | 1h 34m          | Operational               | Single BF operation                                                                                                                                                                                 |
| 18-Oct-18                                                    | 19:00 | 4h 50m          | Operational               | No outlet. One BF operation                                                                                                                                                                         |
| 19-Oct-18                                                    | 06:55 | 1h 33m          | Mechanical                | 1034 coupling failure, weld repair carried out.                                                                                                                                                     |
| 19-Oct-18                                                    | 12:19 | 4h 56m          | Operational               | logistical stop taken due to no sinter route available, rollers replaced on 1027                                                                                                                    |
| 19-Oct-18                                                    | 20:22 | 7h 6m           | Operational               | Logistical stop due to no sinter route available, and stock pile full                                                                                                                               |
| 20-Oct-18                                                    | 05:36 | 2h 24m          | Operational               | delay due to stock pile full and no route available.                                                                                                                                                |

Signed on behalf of the Operator

Dated

02/01/19

Form Sinter Operational

## RELEASES INTO AIR

Form Sinter Operational Cont.

Operational summary for quarter ending

Operator: Tata Steel UK Ltd  
Location: Port Talbot Works  
Permit: BL7108 / RP3730BV

| Iron Ore Sintering - Record of strand stoppages > 30 minutes |       |                 |                     |                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------|-------|-----------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date                                                         | Time  |                 | Planned/            | Reason                                                                                                                                                                                                                                                                                                                              |
|                                                              | Start | Duration (mins) | Unplanned           |                                                                                                                                                                                                                                                                                                                                     |
| 21-Oct-18                                                    | 08:45 | 6h 21m          | Operational         | Logistical stop due to no route to the furnace                                                                                                                                                                                                                                                                                      |
| 21-Oct-18                                                    | 21:23 | 35m             | Mechanical          | Pallet change 51 off 39 on and slam shut - north vanes stayed closed                                                                                                                                                                                                                                                                |
| 22-Oct-18                                                    | 22:08 | 22m             | Electrical          | West feeder tripped on overload                                                                                                                                                                                                                                                                                                     |
| 22-Oct-18                                                    | 04:42 | 4h 35m          | Operational         | high line bunkers full                                                                                                                                                                                                                                                                                                              |
| 22-Oct-18                                                    | 07:00 | 2h 17m          | Mechanical          | To fit Blanks into SWGF to allow plant to run on one fan operations.                                                                                                                                                                                                                                                                |
| 22-Oct-18                                                    | 17:30 | 5h 30m          | Operational         | logistical losses                                                                                                                                                                                                                                                                                                                   |
| 23-Oct-18                                                    | 08:00 | 17h 39m         | Operational         | Plant stop for no room. Hi-line bunkers full, furnace off wind.                                                                                                                                                                                                                                                                     |
| 24-Oct-18                                                    | 02:02 | 2h 0m           | Mechanical          | Strand tripping the main circuit breaker, no obvious reason but found strand lube off, switched to test and after a while strand came in ok.                                                                                                                                                                                        |
| 24-Oct-18                                                    | 04:35 | 19m             | Operational         | Sinter through                                                                                                                                                                                                                                                                                                                      |
| 24-Oct-18                                                    | 05:57 | 4h 3m           | Mechanical          | 1021 conveyor drive slipping due to belt overload, belt dug off and tensioned / tracked.                                                                                                                                                                                                                                            |
| 24-Oct-18                                                    | 19:08 | 5h 55m          | Operational         | Requirement stop due to no route                                                                                                                                                                                                                                                                                                    |
| 25-Oct-18                                                    | 04:05 | 51m             | Electrical          | Strand tripped Main circuit breaker                                                                                                                                                                                                                                                                                                 |
| 25-Oct-18                                                    | 05:03 | 19m             | Electrical          | Plant stopped no alarms, when checked the M.C.B hadn't gone this time.                                                                                                                                                                                                                                                              |
| 25-Oct-18                                                    | 16:16 | 34m             | Mechanical          | Delay to replace damaged roller on 1022                                                                                                                                                                                                                                                                                             |
| 25-Oct-18                                                    | 18:14 | 13h 18m         | Operational         | Plant stop for no outlet, (H-line bunkers full)                                                                                                                                                                                                                                                                                     |
| 26-Oct-18                                                    | 11:07 | 1h 10m          | Electrical          | delay to clean around 1007 due to traveling through North limit.                                                                                                                                                                                                                                                                    |
| 26-Oct-18                                                    | 22:24 | 6h 36m          | Operational         | No outlet, hi-line bunkers full.                                                                                                                                                                                                                                                                                                    |
| 27-Oct-18                                                    | 08:01 | 1h 35m          | Environmental       | Plant stopped as dedust fan switched off. Fan off as Densevevor pipe split to clear blockage.                                                                                                                                                                                                                                       |
| 27-Oct-18                                                    | 20:30 | 8h 56m          | Operational         | Logistical stop taken due to no route for sinter available.                                                                                                                                                                                                                                                                         |
| 28-Oct-18                                                    | 09:00 | 19h 49m         | Operational         | Plant stopped at 09:00 as BF4 went off for 12hrs from 8am. Sinter bunkers and stockpile full full.                                                                                                                                                                                                                                  |
| 29-Oct-18                                                    | 09:14 | 2h 9m           | Operational         | System going out on high high along with cycle fault on 1 fix, pipework split no obvious blockage found, ceramic insulator sections found on grid above rotary valve.                                                                                                                                                               |
| 29-Oct-18                                                    | 13:10 | 4h 8m           | Operational         | 1071 shear pin failed, replaced still sheering pins suspected back log of material along chain, Dti Contacted to vac out....Delay extended due to hood issues while lighting the hood we had 3 slam shuts and twice due to minimum wind boxes when it was showing 12+15 also when the hood did light it went straight to full fire. |
| 30-Oct-18                                                    | 04:00 | 7h 30m          | Operational         | Plant stopped due to Hi line bunkers full and Stockpile very high.                                                                                                                                                                                                                                                                  |
| 31-Oct-18                                                    | 00:58 | 16m             | Operational         | stone/hard limestone jammed in weigh feeder mouth.                                                                                                                                                                                                                                                                                  |
| 31-Oct-18                                                    | 02:57 | 22m             | Mechanical          | hole in south side of pallet, pallet 5 off and 123 on                                                                                                                                                                                                                                                                               |
| 31-Oct-18                                                    | 06:50 | 17h 10m         | Operational         | Single BF operation                                                                                                                                                                                                                                                                                                                 |
| 02-Nov-18                                                    | 08:18 | 30m             | Operational         | Hot sinter needed to be cooled on the cooler                                                                                                                                                                                                                                                                                        |
| 02-Nov-18                                                    | 10:53 | 50m             | Operational         | Return fines chute blockage, Blockage of hard drv jumps and wet material cleared from 1003 impact chute and cleaning of r-fines chute filled chute.                                                                                                                                                                                 |
| 02-Nov-18                                                    | 11:54 | 30m             | Electrical          | NWG fan tripped, electrical in attendance and spurious comm's fault believed to be responsible. Plant restarted but no definitive root cause identified.                                                                                                                                                                            |
| 02-Nov-18                                                    | 12:26 | 44m             | Electrical          | NWG fan tripped, electrical in attendance and spurious comm's fault believed to be responsible. Plant restarted but no definitive root cause identified.                                                                                                                                                                            |
| 02-Nov-18                                                    | 14:48 | 1h 12m          | Electrical          | NWG fan tripped, electrical in attendance and spurious comm's fault believed to be responsible.                                                                                                                                                                                                                                     |
| 02-Nov-18                                                    | 16:00 | 3h 35m          | Load Management     | Plant stop for C.M Levy reduction.                                                                                                                                                                                                                                                                                                  |
| 04-Nov-18                                                    | 02:17 | 28m             | Electrical          | WGF tripped with comms fault                                                                                                                                                                                                                                                                                                        |
| 05-Nov-18                                                    | 05:38 | 24m             | Electrical          | NWG fan for Comm's error.                                                                                                                                                                                                                                                                                                           |
| 05-Nov-18                                                    | 15:41 | 3h 42m          | Load Management     | CM Levi - planned outage 16:00 - 19:00                                                                                                                                                                                                                                                                                              |
| 01-Nov-18                                                    | 00:00 | 26h 40m         | Planned Maintenance | Planned Maintenance                                                                                                                                                                                                                                                                                                                 |
| 02-Nov-18                                                    | 04:00 | 1h 0m           | Planned Maintenance | Planned sinter through after major PM                                                                                                                                                                                                                                                                                               |
| 06-Nov-18                                                    | 15:30 | 4h 3m           | Load Management     | Load Management period taken from 15:30 / 19:33hrs, down day rap carried out.                                                                                                                                                                                                                                                       |

Signed on behalf of the Operator

Date 02/01/19

Form Sinter Operational

## RELEASES INTO AIR

Form Sinter Operational Cont.

Operational summary for quarter ending

31-Dec-18

Operator: Tata Steel UK Ltd  
 Location: Port Talbot Works  
 Permit: BL7108 / RP3730BV

| Iron Ore Sintering - Record of strand stoppages > 30 minutes |       |                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------|-------|-----------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date                                                         | Time  | Duration (mins) | Planned/<br>Unplanned | Reason                                                                                                                                                                                                                                                                                                                                                                                                               |
| 07-Nov-18                                                    | 15:30 | 4h 4m           | Load Management       | Extended L/management period taken.                                                                                                                                                                                                                                                                                                                                                                                  |
| 08-Nov-18                                                    | 11:53 | 2h 45m          | Operational           | All areas full and Single BF operation                                                                                                                                                                                                                                                                                                                                                                               |
| 08-Nov-18                                                    | 15:45 | 3h 42m          | Load Management       | Load Management                                                                                                                                                                                                                                                                                                                                                                                                      |
| 09-Nov-18                                                    | 15:45 | 3h 45m          | Load Management       | 00:00                                                                                                                                                                                                                                                                                                                                                                                                                |
| 09-Nov-18                                                    | 19:30 | 6h 43m          | Operational           | Not Bt off wind hi line bunkers at 81%.                                                                                                                                                                                                                                                                                                                                                                              |
| 10-Nov-18                                                    | 04:18 | 58m             | Operational           | Couple of trays of warm looking sinter stopped to allow to cool by Not cooling no water used / not chasing tons.                                                                                                                                                                                                                                                                                                     |
| 10-Nov-18                                                    | 14:35 | 55m             | Electrical            | replace u/speed on 1022                                                                                                                                                                                                                                                                                                                                                                                              |
| 10-Nov-18                                                    | 15:30 | 4h 0m           | Load Management       | 00:00                                                                                                                                                                                                                                                                                                                                                                                                                |
| 10-Nov-18                                                    | 19:30 | 28h 30m         | Operational           | Delay due to issues with n04 furnace, with stock pile and hi-line bunkers full, no route available                                                                                                                                                                                                                                                                                                                   |
| 12-Nov-18                                                    | 04:50 | 30m             | Mechanical            | Pallet change: 51 on...n04 off                                                                                                                                                                                                                                                                                                                                                                                       |
| 12-Nov-18                                                    | 15:40 | 3h 42m          | Load Management       | Stop for load management CEM Levy                                                                                                                                                                                                                                                                                                                                                                                    |
| 12-Nov-18                                                    | 20:47 | 20m             | Mechanical            | Pallet change for hole, front row middle 121 off 35 on.                                                                                                                                                                                                                                                                                                                                                              |
| 12-Nov-18                                                    | 23:16 | 24m             | Mechanical            | delay for pallet change hole middle row North side 23 off 53 on.                                                                                                                                                                                                                                                                                                                                                     |
| 13-Nov-18                                                    | 03:54 | 1h 59m          | Operational           | build up in chute above 1024 jammed cold crusher delay to clear build up                                                                                                                                                                                                                                                                                                                                             |
| 13-Nov-18                                                    | 07:00 | 30m             | Mechanical            | Pallet change - Hole n-side                                                                                                                                                                                                                                                                                                                                                                                          |
| 13-Nov-18                                                    | 07:34 | 1h 10m          | Electrical            | Cold crusher stopped, but restarted again several times for short spell. Fault traced to faulty U-Speed north side, and south U-Speed adjusted up.                                                                                                                                                                                                                                                                   |
| 13-Nov-18                                                    | 15:40 | 3h 42m          | Load Management       | Stop for CM Levy.                                                                                                                                                                                                                                                                                                                                                                                                    |
| 13-Nov-18                                                    | 21:20 | 4h 18m          | Operational           | Delay due to no route available and hi-line full                                                                                                                                                                                                                                                                                                                                                                     |
| 14-Nov-18                                                    | 15:30 | 4h 7m           | Load Management       | stop taken as plan.                                                                                                                                                                                                                                                                                                                                                                                                  |
| 15-Nov-18                                                    | 00:18 | 35m             | Electrical            | Cooler south drive tripped. Drive reset and cooler inspected visually with no issue found. Tray No-16 at the south drive at the time.                                                                                                                                                                                                                                                                                |
| 15-Nov-18                                                    | 03:38 | 27m             | Mechanical            | Stop for pallet change (Hole) 99 off 2 on                                                                                                                                                                                                                                                                                                                                                                            |
| 15-Nov-18                                                    | 07:15 | 5h 25m          | Mechanical            | Plc issues / cooler drive ring support rail repairs trays No38 / No10 DRF created                                                                                                                                                                                                                                                                                                                                    |
| 15-Nov-18                                                    | 12:40 | 1h 4m           | Electrical            | issues at first with combustion air fan not starting, came in after a couple of attempts, issues than with SWGF auxiliaries comms issues K1 and shifts rectified, feedback from electrical Alarm on mimic 'WASTE GAS PRE-CIP SLC COMMS FAIL', unable to clear. We reset PLC in Pre-Cip sub and alarm cleared.                                                                                                        |
| 15-Nov-18                                                    | 15:57 | 38m             | Mechanical            | Pallet 83 and 135 removed from strand. Pallet 3 and 4 on.                                                                                                                                                                                                                                                                                                                                                            |
| 15-Nov-18                                                    | 14:10 | 50m             | Electrical            | Strand I-fix screen went red swgf stopped hood tripped. Electrical feedback Found the Hirschman Switch in the pre-cip sub losing power, erratically. Re-made the power cable connections as they seemed loose. Then found fan lube tank level low, as lube pumps must have stopped, pumps had re-started once Hirschman switch was repaired, once level in tank had reached sufficient level, SWGF was restarted ok. |
| 16-Nov-18                                                    | 07:42 | 1h 0m           | Operational           | Hi-Line bunkers full/ Blender change                                                                                                                                                                                                                                                                                                                                                                                 |
| 16-Nov-18                                                    | 09:20 | 18m             | Electrical            | Rollfeeder excess RPM causing compaction/ Sinter through                                                                                                                                                                                                                                                                                                                                                             |
| 16-Nov-18                                                    | 11:28 | 39m             | Mechanical            | Oil leak                                                                                                                                                                                                                                                                                                                                                                                                             |
| 16-Nov-18                                                    | 15:45 | 3h 35m          | Load Management       | CM Levy as planned                                                                                                                                                                                                                                                                                                                                                                                                   |
| 16-Nov-18                                                    | 23:58 | 28m             | Mechanical            | Pallet change 81 off 87 on                                                                                                                                                                                                                                                                                                                                                                                           |
| 17-Nov-18                                                    | 08:25 | 35m             | Mechanical            | Pallet change                                                                                                                                                                                                                                                                                                                                                                                                        |
| 17-Nov-18                                                    | 09:43 | 29m             | Mechanical            | Further inspection to 1007 bearbox                                                                                                                                                                                                                                                                                                                                                                                   |
| 17-Nov-18                                                    | 15:45 | 3h 43m          | Load Management       | CM levy stop                                                                                                                                                                                                                                                                                                                                                                                                         |
| 18-Nov-18                                                    | 05:30 | 2h 59m          | Mechanical            | Weigh feeder belt parted, material has dropped down onto 1001, burying tail end Gci bobcat called for along with Acorn. One end of weigh feeder belt has dropped down onto 1001 con and will need to be removed prior to coming back in on three belt weigh feeders. Drf will be completed on my next shift Friday Night.                                                                                            |
| 18-Nov-18                                                    | 08:36 | 52m             | Mechanical            | Delay to remove build up of material from previous delay on 1001                                                                                                                                                                                                                                                                                                                                                     |
| 18-Nov-18                                                    | 15:31 | 3h 54m          | Load Management       | CM levy stop                                                                                                                                                                                                                                                                                                                                                                                                         |
| 19-Nov-18                                                    | 00:18 | 4h 39m          | Operational           | No requirement. Hi-line full                                                                                                                                                                                                                                                                                                                                                                                         |
| 19-Nov-18                                                    | 10:23 | 16m             | Electrical            | Delay when hood tripped during adjustment of C/Afan                                                                                                                                                                                                                                                                                                                                                                  |

Signed on behalf of the operator  
 Date: 02-Jan-19



## RELEASES INTO AIR

Form Sinter Operational Cont.

Iron Ore Sintering - Record of strand stoppages &gt; 30 | 31-Dec-18

Operator: Tata Steel UK Ltd  
Location: Port Talbot Works  
Permit: BL7108 / RFP3730BV

| Iron Ore Sintering - Record of strand stoppages > 30 minutes |       |                 |                       |                                                                                                                                                |
|--------------------------------------------------------------|-------|-----------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Date                                                         | Time  |                 | Planned/<br>Unplanned | Reason                                                                                                                                         |
|                                                              | Start | Duration (mins) |                       |                                                                                                                                                |
| 19-Nov-18                                                    | 15:30 | 4h 15m          | Load Management       | CM levy stop                                                                                                                                   |
| 20-Nov-18                                                    | 07:08 | 8h 22m          | Planned Maintenance   | planned maintenance (12h)                                                                                                                      |
| 20-Nov-18                                                    | 15:30 | 3h 30m          | Operational           | delay due to load management                                                                                                                   |
| 20-Nov-18                                                    | 19:00 | 7h 2m           | Operational           | Logistical stop due to hi-line bunkers full and no4 furnace off wind                                                                           |
| 21-Nov-18                                                    | 16:10 | 1h 20m          | Load Management       | stopped for load management                                                                                                                    |
| 21-Nov-18                                                    | 17:30 | 2h 59m          | Load Management       | CM Levy stop                                                                                                                                   |
| 21-Nov-18                                                    | 20:36 | 3h 47m          | Electrical            | fault with 1001 sequence relay allowing belt to run when rest of system on stop allowing build up in chutes etc                                |
| 22-Nov-18                                                    | 15:45 | 3h 44m          | Load Management       | Plant stop for C M Levy. Delay incorporates load management duration between 1630 and 1730.                                                    |
| 24-Nov-18                                                    | 03:58 | 42m             | Mechanical            | Stop to remove end covers off 1049 & 1047 chain conveyors due to increased waste gas pome.                                                     |
| 25-Nov-18                                                    | 03:41 | 9h 29m          | Mechanical            | Bearing failure                                                                                                                                |
| 26-Nov-18                                                    | 11:06 | 2h 22m          | Operational           | Logistical stop taken due to hi-line bunker and stock pile levels                                                                              |
| 26-Nov-18                                                    | 15:35 | 4h 0m           | Operational           | delay for load management/cm levy                                                                                                              |
| 27-Nov-18                                                    | 10:09 | 21m             | Mechanical            | pallet change for wheel off 64c off 135 on                                                                                                     |
| 27-Nov-18                                                    | 16:18 | 3h 12m          | Load Management       | CM levy stop taken, during delay scaffolding erected to carry out repairs on no18 wrap.                                                        |
| 28-Nov-18                                                    | 07:46 | 57m             | Operational           | Product bin Hihi, delay extend as no route from high line to lower product bin level                                                           |
| 28-Nov-18                                                    | 12:28 | 25m             | Electrical            | Stop to check 1025 north middle phase bottom contactor as high temp identified during thermal checks.                                          |
| 28-Nov-18                                                    | 21:06 | 20m             | Mechanical            | Pallet change for wheel off South side, 22 off 138 on                                                                                          |
| 29-Nov-18                                                    | 03:50 | 16h 49m         | Planned Maintenance   | planned maintenance                                                                                                                            |
| 30-Nov-18                                                    | 21:30 | 18m             | Operational           | delay required to sinter through due to fresh material on strand                                                                               |
| 29-Nov-18                                                    | 23:49 | 1h 52m          | Electrical            | delay to unblock chute along with fault find signal fault on 1047 ddv                                                                          |
| 30-Nov-18                                                    | 09:28 | 39m             | Electrical            | Low lube cooling water alarm, found motor no1 u/s new ordered to be fitted. Running on No2 at present. Slam shut activated when starting hood. |
| 30-Nov-18                                                    | 17:17 | 25m             | Mechanical            | Pallet No20 off 83On                                                                                                                           |
| 02-Dec-18                                                    | 19:28 | 1h 17m          | Operational           | hot sinter on cooler + replenish ore bunkers.                                                                                                  |
| 02-Dec-18                                                    | 04:26 | 19m             | Environmental         | possible signal fault                                                                                                                          |
| 04-Dec-18                                                    | 10:00 | 3h 20m          | Operational           | Stock pile full and high line bunkers full.                                                                                                    |
| 04-Dec-18                                                    | 15:30 | 4h 1m           | Load Management       | CM Levy                                                                                                                                        |
| 06-Dec-18                                                    | 14:30 | 25m             | Mechanical            | re-bar pallet 78                                                                                                                               |
| 06-Dec-18                                                    | 16:00 | 3h 20m          | Operational           | opportunity stop                                                                                                                               |
| 07-Dec-18                                                    | 11:06 | 2h 11m          | Operational           | no room at stock pile and high line full                                                                                                       |
| 07-Dec-18                                                    | 15:30 | 3h 51m          | Operational           | opportunity stop                                                                                                                               |
| 08-Dec-18                                                    | 02:25 | 2h 39m          | Operational           | Hi-line full, stockpile full. No outlet.                                                                                                       |
| 08-Dec-18                                                    | 07:00 | 2h 18m          | Mechanical            | Chute above DDV blocked with compacted material.                                                                                               |
| 08-Dec-18                                                    | 11:50 | 5h 28m          | Operational           | High Line bunkers full along with stockpile.                                                                                                   |
| 09-Dec-18                                                    | 01:07 | 3h 35m          | Operational           | BF bunkers full and little room under 1028                                                                                                     |
| 09-Dec-18                                                    | 09:20 | 7h 23m          | Operational           | Hi Line bunkers full, along with sow of b/f reduced process issues.                                                                            |
| 10-Dec-18                                                    | 00:25 | 9h 40m          | Operational           | unable to maintain over 65mb suction.                                                                                                          |
| 10-Dec-18                                                    | 12:45 | 10h 14m         | Mechanical            | 1074 failed Flights found to be damaged and jammed                                                                                             |
| 11-Dec-18                                                    | 01:50 | 2h 28m          | Mechanical            | Cycle issues on denseveyor suspected blockage First flat section of pipe removed all clear top slide already in open position.                 |

Signed on behalf of the operator  
Date: 02-Jan-19

## RELEASES INTO AIR

Form Sinter Operational Cont.

Iron Ore Sintering - Record of strand stoppages &gt; 30 mi 31-Dec-18

Operator: Tata Steel UK Ltd  
 Location: Port Talbot Works  
 Permit: BL7108 / RP3730BV

| Iron Ore Sintering - Record of strand stoppages > 30 minutes |       |                 |                     |                                                                                                                                                                                                                |
|--------------------------------------------------------------|-------|-----------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date                                                         | Time  | Duration (mins) | Planned/            | Reason                                                                                                                                                                                                         |
| 11-Dec-18                                                    | Start | 3h 5m           | Unplanned           |                                                                                                                                                                                                                |
| 11-Dec-18                                                    | 10:32 | 1h 41m          | Mechanical          | Foreign bodies found in denseveyor pipework                                                                                                                                                                    |
| 11-Dec-18                                                    | 16:40 |                 | Load Management     | L/M                                                                                                                                                                                                            |
| 12-Dec-18                                                    | 15:30 | 5h 30m          | Operational         | Load management C M Lewy                                                                                                                                                                                       |
| 13-Dec-18                                                    | 02:40 | 2h 20m          | Operational         | Hi-Line full                                                                                                                                                                                                   |
| 13-Dec-18                                                    | 10:25 | 3h 44m          | Operational         | No requirements hi-line full. Blender maintenance completed during                                                                                                                                             |
| 13-Dec-18                                                    | 16:00 | 2h 29m          | Load Management     | Load Management period called                                                                                                                                                                                  |
| 13-Dec-18                                                    | 22:28 | 26h 44m         | Mechanical          | Shaft seized                                                                                                                                                                                                   |
| 14-Dec-18                                                    | 19:46 | 53m             | Electrical          | Comms Failure with iflo                                                                                                                                                                                        |
| 15-Dec-18                                                    | 03:09 | 2h 27m          | Mechanical          | Denseveyor discharge pipe blockage                                                                                                                                                                             |
| 15-Dec-18                                                    | 10:51 | 58m             | Operational         | chain found to be blocked                                                                                                                                                                                      |
| 15-Dec-18                                                    | 16:54 | 3h 29m          | Mechanical          | denseveyor not cycling/removing material                                                                                                                                                                       |
| 15-Dec-18                                                    | 22:05 | 1h 55m          | Mechanical          | Denseveyor discharge pipe leaking badly. Stop taken to effect a repair.                                                                                                                                        |
| 17-Dec-18                                                    | 16:15 | 1h 31m          | Load Management     | Load management 18:30 /                                                                                                                                                                                        |
| 17-Dec-18                                                    | 23:08 | 4h 17m          | Operational         | Requirements Stockpile full.                                                                                                                                                                                   |
| 18-Dec-18                                                    | 07:37 | 1h 10m          | Operational         | Change over from SWGF to NWGF                                                                                                                                                                                  |
| 18-Dec-18                                                    | 12:00 | 2h 5m           | Operational         | No requirements due to no route                                                                                                                                                                                |
| 19-Dec-18                                                    | 17:45 | 4h 11m          | Operational         | No requirements due to no route. Partially sintered through                                                                                                                                                    |
| 19-Dec-18                                                    | 02:15 | 23h 27m         | Planned Maintenance | Strand stopped to sinter through ready for planned maintenance, cooler then run off. Numerous issues commissioning plant after pm see selection of productin and electrical reports for Wednesday 19th Nights. |
| 21-Dec-18                                                    | 09:00 | 3h 25m          | Electrical          | Opportunity stop taken to inspect de-dust fan control                                                                                                                                                          |
| 22-Dec-18                                                    | 08:12 | 3h 13m          | Operational         | Plant off line for no outlet. Stockpile and hi-line bunkers full.                                                                                                                                              |
| 22-Dec-18                                                    | 11:36 | 29m             | Mechanical          | Stop to open and inspect 950 DDV for possible destruction.                                                                                                                                                     |
| 22-Dec-18                                                    | 12:44 | 16m             | Electrical          | HSB tripped, reversed and plant restarted.                                                                                                                                                                     |
| 22-Dec-18                                                    | 23:22 | 4h 13m          | Operational         | Requirement stop taken due to hi-line and stock pile full, rollers replaced on 1021                                                                                                                            |
| 24-Dec-18                                                    | 12:05 | 17m             | Mechanical          | North bent beam activated reset, found strand jacking device, jacks extended? please can we monitor same, as no pallet changes for a number of shifts.                                                         |
| 25-Dec-18                                                    | 23:01 | 3h 37m          | Operational         | No requirement                                                                                                                                                                                                 |
| 26-Dec-18                                                    | 16:50 | 32m             | Operational         | Limestone held up                                                                                                                                                                                              |
| 26-Dec-18                                                    | 23:10 | 4h 4m           | Operational         | Hi line bunker levels and stock pile full.                                                                                                                                                                     |
| 27-Dec-18                                                    | 10:00 | 3h 38m          | Operational         | Requirement stop taken. Hi-Line full and 1028 full. Work also carried out on denseveyor pipework and motor change on blender                                                                                   |
| 27-Dec-18                                                    | 17:41 | 5h 54m          | Operational         | Hi line bunkers full along with stockpile                                                                                                                                                                      |
| 28-Dec-18                                                    | 06:30 | 4h 32m          | Operational         | Hi Line full along with stockpile                                                                                                                                                                              |
| 29-Dec-18                                                    | 00:45 | 4h 12m          | Operational         | No req                                                                                                                                                                                                         |
| 29-Dec-18                                                    | 12:17 | 4h 17m          | Operational         | Opportunity stop taken due to no room at hi-line or stock pile                                                                                                                                                 |
| 30-Dec-18                                                    | 01:20 | 3h 33m          | Operational         | 1028 and Hi-Line full                                                                                                                                                                                          |
| 30-Dec-18                                                    | 09:25 | 5h 45m          | Operational         | No Requirement                                                                                                                                                                                                 |
| 30-Dec-18                                                    | 15:50 | 2h 25m          | Operational         | 950 DDV chain blocked with material                                                                                                                                                                            |
| 31-Dec-18                                                    | 05:00 | 21h 3m          | Operational         | Plant stop due to n04 furnace issue, hi-line bunkers full along with sinter stock pile.                                                                                                                        |

Signed on behalf of the operator  
 Dated: 02-Jan-19

