

**Permit Reference Number:** BS3905

**Operator:** Tata Steel UK

**Installation:** Llanwern Steel Works

**Form Number:** A1/4

**Date of Form:** 01/09/09

**Release for year ending:** 2015

| Reporting Form A1/4                                            |                  |                                              |
|----------------------------------------------------------------|------------------|----------------------------------------------|
| Parameter                                                      | Limit value (kg) | Annual release                               |
| Oxides of nitrogen annual mass emissions (as NO <sub>2</sub> ) | None             | 93.69 tonnes                                 |
| Carbon Monoxide annual mass emissions                          | None             | 22.0 tonnes                                  |
| Particulate annual mass emissions [*2]                         | None             | 1.14 tonnes                                  |
| Hydrogen Chloride annual mass emissions [*1]                   | None             | 1.48 tonnes                                  |
| Oil mist annual mass emissions                                 | None             | Unquantified. Ref to Imp item Submission 9.9 |

[\*1] HCl values based on actual concentrations and measured flowrates in conjunction with operating hours per annum. Chromate 2014 figures used for calculation.

[\*2] Particulate emissions as above, but includes also an estimation for NG, using an assumed 1 mg/Nm<sup>3</sup> concentration factor applied to the Natural Gas usage volume @ 3% O<sub>2</sub>

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

Date .....26/01/2016.....

**Permit Reference Number:** BS3905

**Operator:** Tata Steel UK

**Installation:** Llanwern Steel Works

**Form Number:** EW1

**Date of Form:** 01/09/09

### Energy and Water Consumption

**Consumption for Calendar Year ending:** 2015

| Reporting Form EW1                                      |                     |
|---------------------------------------------------------|---------------------|
| Parameter                                               | Quantity            |
| Delivered Electricity MWh                               | 227,902             |
| Primary electricity (delivered x2.4) Mwh                | 546,965             |
| Primary carbon dioxide (primary electricity x 0.166) te | 90,763              |
| Delivered gas MWh                                       | 312,776 (1126.0 TJ) |
| Process water used m3                                   | 5088419             |

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

Date .....26/01/2016.....

Permit Reference Number: BS3905

Operator: Tata Steel UK

Installation: Llanwern Steel Works

Form Number: R1

Date of Form: 01/09/09

Reporting of Waste Disposal and Recovery for the year: 2015

| Waste Description              | Waste                        | Route                           | Disposal (tonnes) | Recovery (tonnes) |
|--------------------------------|------------------------------|---------------------------------|-------------------|-------------------|
| <b>1) Hazardous Waste</b>      |                              |                                 |                   |                   |
| Named hazardous waste          | (1) Drums Contam PPE         | (1) Off Site Recovery           |                   | 48.52             |
|                                | (2) Oil                      | (2) Off Site Recovery           |                   | 340               |
|                                | (3) Chromate Waste           | (3) Off Site Disposal           | 120               |                   |
|                                | (4) WEEE                     | (4) Off Site Recovery           |                   | 14.6              |
|                                | (8) Tank & Separator Sludge  | (8) Off Site Disposal           | *                 |                   |
|                                | (9) Degreasing Waste         | (9) Off Site Recovery           |                   | 24.75             |
|                                | (11) Spill-sorb              | (11) Off Site Recovery          |                   | 7.89              |
|                                | (12) Contaminated Hoses      | (12) Off Site Recovery          |                   | 12.75             |
| Other hazardous wastes         | ---                          | ---                             | ---               | ---               |
| Total hazardous waste          |                              |                                 | 120               | 448.51            |
| <b>2) Non-Hazardous Wastes</b> |                              |                                 |                   |                   |
| Named non-Haz waste            | (1) Bricks & Rubble          | (1) Off Site Recovery           |                   | 87.00             |
|                                | (2) Pickle Line ETP Cake     | (2) PT Landfill                 | 474.54            |                   |
|                                | (3) Wood                     | (3) Recycling                   |                   | 203.24            |
|                                | (4) Scrap Metal              | (4) PT BOS / 3rd Party          |                   | 73769.00          |
|                                | (5) 'General' Waste          | (5) Off Site Landfill/ Recovery | 36.8              | 381.60            |
|                                | (6) Metallic Sludge e.g. RGS | (6) Off Site Recovery           | *                 |                   |
|                                | (7) Hot Mill Scale & Cake    | (7) Off Site Treatment          |                   | 13303.00          |
|                                | (8) Paper & Cardboard        | (8) Recycling                   |                   | 29.94             |
|                                | (9) Plastic                  | (9) Off Site Recovery           |                   | 24.20             |
|                                | (10) Tins & Cans             | (10) Off Site Recovery          |                   | 3.60              |
|                                | (11) Zinc Dross              | (11) Off Site Recovery          |                   | *                 |
|                                | (12) Mixed Recycling         | (12) Off Site Recovery          |                   | 31.06             |
|                                | (13) Cables                  | (12) Off Site Recovery          |                   | 17.72             |
|                                | (14) Corex                   | (14) Recycling                  |                   | 25.20             |
|                                | (15) Welding Waste           | (15) Off Site Disposal          | 26.68             |                   |
|                                | (17) Scrap                   | (17) Recycling                  |                   | 4.30              |

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

Date .....26/01/2016.....

**Permit Reference Number:** BS3905

**Operator:** Tata Steel UK

**Installation:** Llanwern Steel Works

|                                                                                                                                          |     |     |        |          |
|------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--------|----------|
| Other non-haz waste                                                                                                                      | --- | --- | ---    | ---      |
| Total non-haz waste                                                                                                                      |     |     | 538.02 | 87879.86 |
| TOTAL WASTE                                                                                                                              |     |     | Total: | 88986.4  |
| Operator's comments: All waste data compiled from: Waste Management Contractors, and Accounting function(s). *Awaiting third party data. |     |     |        |          |

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

Date .....26/01/2016.....

**Permit Reference Number:** BS3905

**Operator:** Tata Steel UK

**Installation:** Llanwern Steel Works

**Form Number:** PI1 - Environmental Performance Indicators

**Date of Form:** 01/09/09

**Reporting of Performance Indicators for the year:** 2015

| Process Area | Performance Indicator                            |                                            |                                                                |       |                                                                                     |
|--------------|--------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|
|              | Water supplied per tonne of rolled steel, litres | Oil used per tonne of rolled steel, litres | Substances released into the air per tonne of rolled steel, kg |       | Waste disposal per tonne of rolled steel (excluding material sent for recovery), kg |
|              |                                                  |                                            | NOx (as NO2)                                                   | CO2   |                                                                                     |
| Hot Mill     | 2098                                             | 1.04                                       | 0.081                                                          | 118.2 | *                                                                                   |
| Cold Mill    |                                                  | 0.25                                       |                                                                |       |                                                                                     |
| Zodiac       |                                                  | 0.28                                       | 0.046                                                          | 67.8  |                                                                                     |

**Operator's comments:**

- Only 'total' water usage KPI values available
- Total water = 5088419 m3 (Process) + 99450 m3 (Domestic) = 5187869m3
- Galv tonnage 504550t, HRP tonnage 697065t, CRP tonnage 1271766t --- [472909t (Cold Rolled) & 798858t (Pickled)]
- Oil usage data (from SAP): HRP 728360 L, CRP 313862 L, Zodiac 142200 L (this includes all: oils, greases, and coating oils, but excludes fuel & transport oils)
- \* This figure will be updated when all waste is confirmed in form R1 above.

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

Date .....26/01/2016.....

**Permit Reference Number:** BS3905

**Operator:** Tata Steel UK

**Installation:** Llanwern Steel Works

**Form Number:** LCPD1

**Date of Form:** 01/09/09

**LCPD Reporting - Summary for the year: 2015**

**Energy Usage**

| Energy Usage Summary       |                   |                   |                   |                     |                   |                   |                                         |             |
|----------------------------|-------------------|-------------------|-------------------|---------------------|-------------------|-------------------|-----------------------------------------|-------------|
| Release Point [*2]         | A14<br>Boiler No1 | A15<br>Boiler No2 | A16<br>Boiler No3 | A14<br>Boiler No1   | A15<br>Boiler No2 | A16<br>Boiler No3 | All LCPD<br>Release<br>Points<br>Totals |             |
| Parameter                  | Natural Gas       |                   |                   | Distillate Fuel Oil |                   |                   |                                         |             |
| Fuel NCV                   | 37.24 MJ/m3 [*1]  |                   |                   | 43.02 GJ/t [*1]     |                   |                   |                                         |             |
| Annual fuel usage (tonnes) | 6841.8 t          |                   |                   | 0.2 t               |                   |                   |                                         | 6842.0 t    |
| Annual energy input (GJ)   | 343003.2 GJ       |                   |                   | 8.6 GJ              |                   |                   |                                         | 343011.8 GJ |

**LCPD Mass Releases**

| Parameter                                                      | Annual Mass Release | Unit |
|----------------------------------------------------------------|---------------------|------|
| Mass release of oxides of nitrogen as NO2 from LCPD plant [*3] | 13.2                | t    |
| Mass release of sulphur dioxide from LCPD plant as SO2 [*4]    | 0.13                | t    |
| Mass release of carbon dioxide from LCPD plant [*5]            | 19,382.6            | t    |
| Total dust emission (as total suspended particles) [*6]        | 64.9                | kg   |

[\*1] The CV's used are from Government published factors for calendar year 2013, these being used for EUETS reporting purposes

[\*2] All three Boilers share common metering

[\*3] Factors used: NOx factor of 1.93 [Gas], and 8.10 [Oil], and NG Density of 0.748 kg/m3

[\*4] Assumed Natural Gas Sulphur content of 7mg/m3, and Fuel Oil content of 0.1%

[\*5] CO2 Emission factors of: **74.15**, and **56.50** kg CO2/GJ used for Gas Oil & Natural Gas respectively [from annually published national factors]

[\*6] An accepted value of 1mg/Nm3 in waste gas used as basis for particulate mass release

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

Date .....26/01/2016.....