| Cyfoeth Naturiol Cymru / Natural Resources Wales | **EPR Compliance Assessment Report** | Report ID: 05594 |
|---|---|---|

**This form will report compliance with your permit as determined by an NRW officer**

| | | | | | | |
|---|---|---|---|---|---|---|
| Site | **Tata Steel Port Talbot steelworks** | | | Permit Ref | BL7108IM (as amended) | |
| Operator/ Permit holder | Tata Steel UK Ltd | | | | | |
| Date | 15 May 2014 | | | Time in | 10.00 | Out 15.30 |
| What parts of the permit were assessed | $PM_{10}$ exceedance investigations and Coke Ovens inspection: see below for full details | | | | | |
| Assessment | EPR - inspection | EPR Activity: | Installation X | Waste Op | | Water Discharge |
| Recipient's name/position | Jason Heatman, Lead Environmental Engineer, Tata Steel Port Talbot | | | | | |
| Officers names | DMP Broom & DE Cowie | | | Date issued | 17 December 2014 | |

## Section 1 - Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation and any action you may need to take are given in the "Detailed Assessment of Compliance" (section 3). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS scores can be consolidated or suspended, where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

| Permit Conditions and Compliance Summary | | | | Condition(s) breached |
|---|---|---|---|---|
| **a)** Permitted activities | **1.** Specified by permit | A | | |
| **b)** Infrastructure | **1.** Engineering for prevention & control of pollution | A | | |
| | **2.** Closure & decommissioning | N | | |
| | **3.** Site drainage engineering (clean & foul) | N | | |
| | **4.** Containment of stored materials | N | | |
| | **5.** Plant and equipment | A | | |
| **c)** General management | **1.** Staff competency/ training | N | | |
| | **2.** Management system & operating procedures | A | | |
| | **3.** Materials acceptance | N | | |
| | **4.** Storage handling, labelling, segregation | N | | |
| **d)** Incident management | **1.** Site security | N | | |
| | **2.** Accident, emergency & incident planning | N | | |
| **e)** Emissions | **1.** Air | A | | |
| | **2.** Land & Groundwater | N | | |
| | **3.** Surface water | N | | |
| | **4.** Sewer | N | | |
| | **5.** Waste | N | | |
| **f)** Amenity | **1.** Odour | N | | |
| | **2.** Noise | N | | |
| | **3.** Dust/fibres/particulates | A | | |
| | **4.** Pests, birds & scavengers | N | | |
| | **5.** Deposits on road | N | | |
| **g)** Monitoring and records, maintenance and reporting | **1.** Monitoring of emissions & environment | A | | |
| | **2.** Records of activity, site diary, journal & events | A | | |
| | **3.** Maintenance records | N | | |
| | **4.** Reporting & notification | N | | |
| **h)** Resource efficiency | **1.** Efficient use of raw materials | N | | |
| | **2.** Energy | N | | |

**KEY**: **C1, C2, C3, C4** = CCS breach category **( * suspended scores are marked with an asterisk),**
**A** = Assessed or assessed in part (no evidence of non-compliance), **N** = Not assessed, **NA** = Not Applicable

| **Number of breaches recorded** | 0 | **Total compliance score** (see section 5 for scoring scheme) | 0 |
|---|---|---|---|

**If the Total No Breaches is greater than zero, then please see Section 3 for details of our proposed enforcement response**

**Section 2 – Compliance Assessment Report Detail**

This section contains a report of our findings and will usually include information on:

- the part(s) of the permit that were assessed (e.g. maintenance, training, combustion plant, etc)
- where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- any non-compliances identified
- any non-compliances with directly applicable legislation
- details of any multiple non-compliances
- information on the compliance score accrued inc. details of suspended or consolidated scores.
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice.
- a reference to photos taken

## Site description

Tata Steel UK Ltd (Tata) operates an integrated iron and steelworks at Port Talbot, Neath Port Talbot. The site is permitted as an installation under the Environmental Permitting Regulations (EPR). The steelworks has several identifiable permitted processes which are carried out sequentially across the installation to convert raw iron ores and coal to semi finished (slab) and finished steel products (such as hot rolled, pickled and oiled, cold rolled and annealed). The permit also covers coke making and the reception, stockpiling and blending of raw iron making materials. Two other companies, Cambrian Stone and Harsco, undertake separately-permitted slag handling and iron plating activities at the steelworks on Tata's behalf.

## Purpose of visit/assessment

This visit is in two parts: first, we discussed recent particulate matter $(PM)_{10}$ air quality standard exceedances with Tata representatives. Second, we inspected the coke ovens and the coke & coal rail import yards at Port Talbot steelworks.

## $PM_{10}$ (air quality) related issues

**Person(s) present** (office based)

**Tata Steel** Richard Leonard
Fiona Abbott
Georgina Brooks
Claire Grainger
Hywel Woolf
Andrew Townsend
Charlotte Barlow

**NRW** Mark Broom
Douglas Cowie

In December 2013 and January and February 2014, Neath Port Talbot County Borough Council (NPTCBC)'s air quality monitoring network recorded a series of $PM_{10}$ daily exceedances. Natural Resources Wales has reviewed $PM_{10}$ exceedance day reports produced by Tata where local sources could not be ruled out as having contributed to these exceedances. We found that in early 2014 the coke ovens, blast furnace and raw material handling sections of Port Talbot steelworks could not be discounted as having contributed to some of these exceedances. During part of this period the coke ovens were being underfired (operated) on coke oven gas, rather than their usual fuel of mainly blast furnace gas.

Natural Resources Wales has reviewed the use of Emergency Incident Forms (EIFs), shift reports and internal Air Quality alerts issued at this time across the site.

Air Quality alerts and responses to these alerts

Tata showed that it issued its daily alerts and alert updates during the exceedance days we examined. Alerts are normally circulated around 9.00am. Example alerts for both exceedance days and non-exceedance days were inspected. These showed how the operator had taken into account wind speed & direction, general weather conditions and staff observations. Forecasts from the Defra air quality website are also considered by the operator.

No automatic alerts are issued during exceedance days that happen over a weekend or bank holiday; however shift operators are able to interrogate the installation's PI data system to access the relevant weather and air quality data. Tata has looked at automating these alerts but it is a complex process. If the exceedance days escalate disproportionally across the year, Tata should review the need to issue alerts over weekends and bank holidays.

Responses to air quality alerts were variable. Some contractor responses did not meet the same standard as internal Tata works area responses. Timely feedback is expected from all works areas and contractors, even if the wind direction is blowing away from populated areas around the steelworks. Tata has produced a standard feedback form to capture the necessary information in a consistent manner. The form is being further developed as the Environment Team refine their new dust fallout prediction tool.

Tata is also rolling out training sessions to its different works areas e.g. steelmaking (BOS) plant, coke ovens to increase awareness of air quality issues and impacts among its staff.

Further work is needed to verify how Tata's contractors are responding to air quality alerts. NRW officers will be carrying out compliance visits at Harsco and Cambrian Stone / Lafarge Tarmac to progress this.

Shift Reports

The example shift reports that we examined did show air quality was being considered in shift handover records. The records could be improved by stating if amber and/or red alerts have been issued (and where there was feedback given on the alerts). A flow chart could assist Tata's staff by showing the steps that need to be taken in response to air quality alerts and ensure greater capture of relevant information and actions taken in the shift reports.

NPTCBC has changed its air quality alert system and it now has to be set up through a contractor, Ricardo-AEA. It can be set up to alert if there is an exceedance day or if an hourly mean breaches a predefined level at any NPTCBC managed monitoring station. Tata should review its list of key staff who receive the NPT CBC email alerts to make sure it is accurate and up-to-date.

The company should also ensure that the new monitoring stations (Prince Street 2 and Little Warren) have been set up to alert the various levels of management within the steelworks.

Tata's contractor Nalco should be included and notified of any alerts during the working week.

EIFs

Environmental Incident Forms (EIFs) are raised when Tata's staff see or find an environmental problem. Tata maintains that EIFs are discussed regularly at weekly works area meetings, although some works areas appear to have embraced this approach more than others. It was evident to us that use of the EIF system is well-established in the steel (BOS) plant, blast furnaces and sinter plant/burdening areas, but less developed at the coke ovens. Work is ongoing at the coke ovens to standardise reporting of events such as 'black pushes' to assist in the completion of EIFs.

EIFs raised by different works areas during some exceedance days in 2014 were reviewed. These EIFs are always included in Tata's breach reports as part of the investigation process (see below). While some EIFs had not been fully completed, others had identified corrective actions. Tata was able to show us an example of an incomplete EIF involving a leak of coal dust that its staff had reviewed and re-assessed; subsequent EIFs raised by the same works area were of better quality.

The operator needs to ensure that if any EIF is raised, sufficient information is included to enable any corrective actions to be identified as quickly as possible. This will help demonstrate the system works consistently and effectively at tackling environmental problems.

No compliance score has been applied in response to the incomplete EIFs reviewed during this visit, as it was not possible to link them to any specific environmental off-site impact or pollution. We will however be reviewing the use and content of EIFs as part of a future compliance inspection.

Air quality investigations

Tata showed us that it collects extensive data about each exceedance day. This data is collated and analysed by Tata's Safety, Health & Environment (SHE) Team and is used for a range of purposes. Examples include compiling exceedance day reports and development of the dust fallout prediction tool. The SHE Team also conducts periodic audits of different works areas and the frequency of these audits is increased in the event of a sudden increase in exceedance days.

We examined representations from three different works areas during our visit: the BOS plant, the coke ovens and the sinter plant.

1. **BOS plant**

- High production levels in 2013/14 were noted
- Use of EIFs is commonplace and established, although the number of EIFs raised is somewhat skewed because of a specific issue at the concast plant. EIFs are regularly discussed in plant meetings.
- Development of a steel 'slop' prediction model is commendable and may represent an intervention which is beyond recognised Best Available Techniques (BAT). The SHE Team agreed to look into obtaining process data from the blast furnaces concerning iron silica content to enhance the iron chemistry data already collected. This could help develop the prediction model further and reduce incidence of slops. It could also feed into the wider dust fallout prediction model.
- Tata highlighted some ongoing repairs and improvements to the Hot Metal Pouring Bay Fume Extraction Plant (FEP; emission point A10) and the CAS2 FEP. We will require a further update when this work is complete.

2. **Coke ovens**

- Tata has noted an increased frequency of 'black pushes' as the coke oven batteries get older. The inspecting officers were shown graphs confirming this trend. Late 2013 was a particularly noteworthy period.
- Work to standardise what constitutes a black push is ongoing – see 'EIFs' above.
- The operator could not find a correlation between black pushes and elevated $PM_{10}$/exceedance days.
- Coke Oven Gas (COG) underfiring in early January 2014 was discussed. This was due to an outage on the boosted COG gas main. Blast furnace gas is normally used to fire the coke ovens.
- A basic overview of the long-term capital expenditure plan for the coke ovens was provided. This is discussed further in the coke ovens visit section (see below).

3. **Sinter plant**

- The SHE Team's observations concerning sinter conveyor temperatures are noted. It may be useful to study temperature data during the planned sinter plant stop (w/c 12 May 2014).
- The relationship between sinter strand speed and frequency of exceedance days was examined. In March 2013, strand speed and associated production increased compared to the previous month. However the same number of exceedance days (4) were recorded in both February and March 2013 and the PM10 levels did not differ greatly in either month.
- Spikes in sinter cooler temperature were noted on 18 Feb and 3 March 2013. High cooler temperatures can influence the level of dust emissions.

Hand-held monitors are used by the SHE Team to supplement data from the existing on-site air quality monitoring network. High winds were recorded during early 2014 across the steelworks and the hand-held monitoring data recorded high PM10 levels at many locations, including at some sites on the windward (west) side of the works. Furthermore, works processes were operating normally during the same period apart from a few days where 100% Coke Oven Gas (COG) was used for underfiring at the coke ovens. Underfiring using COG can generate increased emissions. NRW is interested to see the results of the operator's hand-held monitoring during early 2014; if this data is readily available and can be shared, it should be forwarded to the inspecting officers for comment.

The level and detail of contractor responses varied. There were some gaps in the data from Harsco, such as the status of the briquetting plant and the steel slab scarfing area during exceedances. It was identified that the quality of the Harsco data could potentially be improved if staff from Tata's ironmaking and steelmaking works areas were able to scrutinise it.

For Cambrian Stone, although slag granulation data was forthcoming the same could not be said for the company's slag crushing operations (size fraction being crushed and location of the crushers) and also haul road movements of slag (including to and from the Port Talbot Dock gate interim stockpile). This information needs to be supplied as part of Cambrian Stone's contribution to any breach day investigation report to help show if these operations and movements are contributing (or not) to particulate loadings from the steelworks footprint.

In conclusion, there were no obvious gaps in the breadth of information being collected by Tata. The level of information being collected by Tata's contractors in response to air quality alerts and for air quality investigations needs to be investigated further.

**Morfa Coke Ovens – compliance visit**

**Person(s) present** (Coke Ovens)

| | | | |
|---|---|---|---|
| **Tata Steel** | Fiona Abbott | **NRW** | Mark Broom |
| | Charlotte Barlow | | Douglas Cowie |
| | Georgina Brooks | | |
| | Andrew Townsend | **Otto Simon** | Phil Beardsley |
| | Ian Gofton | | |
| | Stuart Mann | | |
| | Wayne Hoffrock | | |
| | Joshua Cockings | | |

The gallery underneath the coke oven batteries was inspected. This vaulted area houses the gas supply (blast furnace and cleaned coke oven gases), air and exhaust gas ducts that move gases to and from the base of the coke oven battery flues. Each oven has 20 pairs of flues that form the wall of the oven. Gas is supplied to one side of the flue along with air about every 20 minutes or so. The piped gases pass through a regenerator and combustion subsequently takes place in the first flue. The exhaust gases then travel down the other side of the pair of flues, through the regenerator, into a gas main and out of the main stack.

Approximately every 20 minutes the gas flows are stopped and paused which moderates the coking temperature. The gases then travel to the second part of the flue, completing the first part of the gas flow. This continual alternating of gas flow with the exhaust gases heats the coal within the oven and converts it to coke over a period of just over 18 hours.

The amount of gas added to each flue depends on its position along the oven. More gas is needed at the ends of the oven than in the middle and more gas is needed on the 'coke' side than on the ram side, as there is more coal that needs carbonising on the coke side. The flow of gas is controlled by a series of plates which have four adjustable holes each. The air flow is controlled by a damper and then through slats (known as fingers) that restrict the air flow to the combustion flue.

Port Talbot steelworks uses mainly blast furnace gas to fire its ovens, which is sometimes supplemented using coke oven gas (COG). If blast furnace gas is not available, then the gallery operators have to manually change the gas flow to COG and also open a second set of dampers to allow air ingress and achieve correct combustion conditions within the oven flues. This changeover of gases is not automated in Port Talbot and performing the task manually takes time and is labour-intensive. For short-term periods using COG, it is not feasible to complete this manual gas flow changeover before underfiring using blast furnace gas resumes. An example scenario would be when the boosted COG gas main is out of action (see above). NRW would like to understand more about the timing and circumstances where the decision is taken to conduct a full gas flow changeover from blast furnace gas to COG (see below). This can be discussed during a future compliance visit to the coke ovens.

The gallery is currently having extensive work carried out to improve the combustion in the oven flues. This work involves re-grouting the gas supply lines that pass through the regenerators and into the oven flues while the ovens are still operating. This work is difficult and extensive; normally there are 34 flues per oven and a total of 42 ovens in each battery. Only six flues can be re-grouted working inwards from each oven end, otherwise problems occur with gas transfer in the operating ovens above. Thousands of individual plates also need adjusting to ensure they operate correctly after the flues are re-grouted.

Tata is carrying out extensive work at the COG by-products plant area to improve operations. This work also prepares Morfa Coke Ovens for COG desulphurisation in order to meet the relevant BAT conclusions and extend the operating life of the coke oven batteries.

Coal and coke rail import

Coal is imported from UK mines together with coke from Scunthorpe steelworks through a discharge facility on the eastern edge of the site. This facility takes coal directly from the rail cars through bottom discharge and stacks it out in a semicircular pile on a concrete plinth. The coal and coke is then moved from the plinth to the coal stock yard and the coke yards for use.

The storage area could be improved by using 'Legio' blocks for separating any smaller piles. Coal trains are usually discharged on a 23.30hrs slot and coke on a 01.30hrs slot, with the occasional 16.00hrs slot also used. Due to the length of the rails beyond the facility the trains have to split in the 'knuckle' yard. The first 16 wagons are off-loaded and then replaced with the other 16 wagons of a 32-wagon train.

## Other issues

We noted that of number of cladding sheets appeared to be missing from the southern gable end of the main BOS plant building. Tata needs to have a plan to review the steel plant cladding and replace any missing sheets to reduce any fugitive fume and dust releases from the BOS plant. Such releases could potentially contribute towards elevated $PM_{10}$ levels in Port Talbot. We will be examining the condition of the BOS plant cladding in more detail during a future compliance visit.

[END OF SECTION 2]

| Cyfoeth Naturiol Cymru Natural Resources Wales | **EPR Compliance Assessment Report** | Report ID**:** 05594 |
|---|---|---|

| **This form will report non-compliance with your permit as determined by an NRW officer** | | | |
|---|---|---|---|
| Site | Tata Steel Port Talbot steelworks | Permit | BL7108IM (as amended) |
| Operator/ Permit | Tata Steel UK Ltd | Date | 15/5/2014 |

| **Section 3- Enforcement Response** **Only one of the boxes below should be ticked** | |
|---|---|
| You must take immediate action to rectify any non-compliance and prevent repetition.<br>Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below. | |
| Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed. | n/a |
| In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue. | n/a |
| We will now consider what enforcement action is appropriate and notify you, referencing this form. | n/a |

**Section 4- Action(s)**

Where a non - compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.

| **Criteria Ref.** | **CCS Category** | **Action Required/Advised** | **Due Date** |
|---|---|---|---|
| See Section 1 above | | | |
| C2 | N/A | **Action 1:** The operator needs to ensure that if any EIF is raised, sufficient information is included to enable any corrective actions to be identified as quickly as possible. We will be reviewing the use and content of EIFs as part of future compliance inspections. | Ongoing; subject of future compliance visits |
| B5 | N/A | **Action 2:** Update the inspecting officers concerning the ongoing repairs and improvements to the Hot Metal Pouring Bay Fume Extraction Plant (FEP; emission point A10) and the CAS2 FEP at the steelmaking plant. | **31 December 2014** unless otherwise agreed in writing |
| B1 | N/A | **Action 3:** Review the external cladding of the steel plant structure and implement a plan to replace any missing cladding sheets. We will be examining the condition of the BOS plant cladding in more detail during a future compliance visit. | Ongoing; subject of future compliance visits |
| N/A | | **Recommendation 1:** Tata needs to review the need to issue automatic air quality alerts across the site on weekends and bank holidays. If the frequency of PM10 exceedance days escalates disproportionally across the year, then automatic alerts should be used during these periods. | N/A |
| N/A | | **Recommendation 2:** Use of a flow chart showing the steps that need to be taken in response to air quality alerts should be considered to assist operators and ensure greater capture of relevant information and actions taken in shift reports. | N/A |
| N/A | | **Recommendation 3:** Tata should review which key staff should receive the NPT CBC air quality email alerts. Tata should also ensure the Prince Street 2 and Little Warren monitoring stations are included in the suite of alerts. Tata's contractor Nalco should be included and notified of any alerts during the working week. | N/A |
| N/A | | **Recommendation 4:** NRW is interested to see the results of the operator's hand-held PM10 monitoring during early 2014. If this data is readily available and can be shared, it should be forwarded to the inspecting officers for comment. | N/A |
| N/A | | **Recommendation 5:** NRW would like to understand more about the timing and circumstances where the decision is taken to conduct a full gas flow changeover from blast furnace gas to COG. | Next compliance visit to Coke Ovens |

## Section 5 - Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- advise on corrective actions verbally or in writing
- require you to take specific actions in writing
- issue a notice
- require you to review your procedures or management system
- change some of the conditions of your permit
- decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you.

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and or suspension or revocation of the permit.

**See our Enforcement and Civil Sanctions guidance for further information**

This report does not relieve the site operator of the responsibility to

- ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- ensure you comply with other legislative provisions which may apply.

### Non-compliance scores and categories

| CCS category | Description | Score |
|---|---|---|
| C1 | A non-compliance which could have a **major** environmental effect | 60 |
| C2 | A non-compliance which could have a **significant** environmental effect | 31 |
| C3 | A non-compliance which could have a **minor** environmental effect | 4 |
| C4 | A non-compliance which has **no** potential environmental effect | 0.1 |

**Operational Risk Appraisal (Opra) -** Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

## Section 6 – General Information

### Data protection notice

The information on this form will be processed by Natural Resources Wales (NRW) to fulfill its regulatory and monitoring functions and to maintain the relevant public register(s). NRW may also use and/or disclose it in connection with:

- offering/providing you with its literature/services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information Regulations request.

NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

### Disclosure of information

NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within twenty working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

### Customer charter

**What can I do if I disagree with this compliance assessment report?**

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with the officer's line managers. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00–18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on (0845) 601 0987.