

Compliance Assessment Report

Report ID:
CAR_NRW0032995

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

Site	Port Talbot Steel Works	Permit Ref	BL7108IM			
Operator/Permit holder	Tata Steel UK Limited					
Regime	Installations					
Date of assessment	23/11/2017	Time in	10:30	Out	16:30	
Assessment type	Audit					
Parts of the permit assessed	1 Management; 2 Operations; 3 Emissions and Monitoring; 4 Information					
Lead officer's name	Cowie, Douglas					
Accompanied by	Broom, Mark					
Recipient's name/position	Claire Grainger/ Environment Manager	Date issued	29/06/2018			

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). 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	CCS Category	Condition(s) breached
A1 - Specified by permit	A	
B1 - Infrastructure - Engineering for prevention and control of emissions	A	
B5 - Infrastructure - Plant and equipment	A	
C2 - General Management - Management system and operating procedures	A	
G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment	A	
G2 - Monitoring and Records, Maintenance and Reporting - Records of activity, site diary/journal/events	A	
G3 - Monitoring and Records, Maintenance and Reporting - Maintenance records	A	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	A	
H1 - Resource Efficiency - Efficient use of raw materials	A	
H2 - Resource Efficiency - Energy efficiency	A	
KEY: See Section 5 for breach categories, suspended scores will be indicated as such. A = Assessed or assessed in part (no evidence of non-compliance), X = Action only, O = Ongoing non-compliance, not scored.		

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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If the Number of breaches recorded is greater than zero, please see Section 3 for 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 (eg. 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 advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

Site description

Tata Steel UK Ltd (Tata Steel) operates an integrated iron and steel works at Port Talbot, Neath Port Talbot. The site is permitted as an installation under the Environmental Permitting Regulations (EPR). Tata Steel has several defined industrial 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 steel). The permit also covers coke making and the reception, stockpiling and blending of raw iron making materials. Four other companies – Cambrian Stone, Harsco Metals, Runtech and ICL – are contracted to undertake their own permitted activities at the steelworks on Tata Steel's behalf.

Purpose of visit/assessment

This intervention focused on the Sinter Plant, Coke Ovens and fugitive dust management and control at Port Talbot steelworks. NRW has initiated a targeted programme of compliance interventions focusing on these issues.

A site inspection was undertaken at the sinter and high line conveyor systems located between the sinter plant and ferrous stock houses. We also observed other parts of the steelworks including the coke ovens from the site road system.

NRW has received an increasing number of complaints about dust and emissions from the steelworks during 2017. Tata Steel continues to notify us about breaches of the permitted emission limit values (ELVs) for dust at the Sinter Plant main stack (A1) and fugitive (visible) dust emissions from Coke Oven Doors and Tops (A54). These ongoing ELV breaches and potential fugitive dust emissions from raw material storage and handling are of concern to NRW.

Tata personnel also provided a quarterly update on the Capital Expenditure (CAPEX) environmental improvement projects which are ongoing at Port Talbot steelworks. Some of these projects have introduced or are introducing plant improvements and upgrades which are necessary to comply with the Industrial Emissions Directive and the Best Available Techniques Conclusions (BATc) for the Iron and Steel industry sector.

Finally, we discussed a proposal to manufacture bioethanol from iron and steelmaking gases, which is currently at an early (concept) stage.

The relevant permit conditions are listed under Sections 1.1, 1.2, 1.3, 1.4, 2.1, 2.3, 3.1, 3.2, 3.5, 4.1, 4.2 and 4.3 of Tata's permit.

Person(s) present

Tata Steel

Fiona Abbott (Coke Ovens only)

Claire Grainger

Michael Launder

Jason Massey
Andrew Townsend
Andrew McGregor (Sinter Plant only)
Richard Brown (Sinter Plant only)
Tom Watson (Sinter Plant only)
Darren Isaac (Sinter Plant only)
Cerith Gill (Sinter Plant only)
Wayne Hoffrock (Coke Ovens only)
Joshua Cockings (Coke Ovens only)

NRW

Mark Broom
Doug Cowie

Sinter plant

The Sinter Plant prepares, blends and heats raw materials for use in the blast furnaces. It has three permitted emission points:

1. Sinter plant main stack (A1)
2. Sinter plant secondary de-dust stack (A2)
3. Sinter plant mixing and rolling drum stack (A3)

This programme of targeted inspections has focused on emission points A1 and A2 and ongoing non-compliance with the ELV for dust (particulates) at emission point A1.

During this intervention the following topics and issues were considered:

A1 Sinter main stack

- CAPEX project update
- North Electrostatic Precipitator (ESP) fan impellor defects. Replacement fan being sourced from Teesside. Possible future plant outages
- Sinter plant on single-fan (reduced output) mode during ESP fan repairs
- Communicating the mode of operation (single or dual fan) to NRW
- 'Double-dome' valve performance under scrutiny. Flat-top valves being trialled; possible replacement by rotary valves with ceramic components
- ESP power field losses and split field performance issues
- Optimisation of ESP dust rapping system. Power-off rapping not yet in place; Tata Steel need to confirm timescale
- Influence of chloride inputs on waste gas system performance
- Review of by-product and 'revert' inputs into sinter blends
- Wind main refurbishment and repair
- Dust suppression system links to sinter control and PI system
- Lignite-lime injection system: commissioning on hold
- Future maintenance regime and duration of stops
- Compliance with permitted ELV (40.00mg/m³)
- Content of future Schedule 5 Part A & Part B notifications

A2 Sinter secondary de-dust stack

- CAPEX project update
- ESP efficiency monitoring and analysis
- Reliability of ESP power fields. No.2 field planned change
- Installation of replacement bag filter including timescales
- Ducting repair work

- Continuous Emissions Monitoring System (CEMS): extra monitors being considered before and after ESP to assess performance
- Future maintenance regime and duration of stops
- Compliance with permitted ELV (30.00mg/m³)
- Content of future Schedule 5 Part A & Part B notifications

Sinter cooler

- Cooler repair and refurbishment work programme: update
- Cooler main (outer) support beam replacement work completed
- Future maintenance regime and duration of stops

We have consolidated and summarised our findings and compliance assessments from four targeted sinter plant interventions in 2017/18 in report **CAR_NRW0032996**.

Coke Ovens

Morfa Coke Ovens heats coking coals in the absence of oxygen to produce high-quality coke which is used at the sinter plant and the blast furnaces. Coke Oven Gas (COG) generated within the ovens is purified and used as a fuel across the steelworks.

At Port Talbot there are two batteries of 42 ovens each and ten permitted emission points:

1. Morfa Coke Oven batteries (A54)
2. Morfa main stack (A55)
3. Ministerstein coke-side fume hood (A56)
4. Ammonia incinerator (A57)
5. Secondary coal crusher stack (A58)
6. Coke Oven Gas (COG) triple flare stack (A59)
7. Coke quench tower (old) (A60B)
8. Coke quench tower (new) (A60B)
9. COG collecting main bleeder valves (A61)
10. COG flare stack (A67)

This programme of targeted inspections has focused on emission point A54 and ongoing non-compliance with the ELVs for fugitive (visible) emissions from coke oven doors and tops. We also considered emissions from charging ovens with coal.

During this intervention the following topics and issues were considered:

Coke oven doors

- CAPEX and Morfa Coke Ovens Life Extension project update
- Door and door frame replacement programme
- Small (leveller) door jetting and cleaning options. Automated solution at concept and design stage. Would be retrofitted
- Refurbishment and upgrade of oven pressure controllers: ongoing
- Dates of future planned maintenance stops
- Compliance with permitted ELV (10% leakage / 90% no leakage)
- Comparison of Battery 1 v Battery 2 environmental performance. Battery 1 approaching compliance with ELV. Battery 2 showing improvement. Attributed to leveller door cleaning work
- Content of future Schedule 5 Part A & Part B notifications

Coke oven tops

- CAPEX and Morfa Coke Ovens Life Extension project update
- Sealing and re-sealing of ascension pipe and spigot joints
- Recycled coal tar pitch (sealant) remaining effective
- Ongoing renewal of ascension pipes. 72 done in 2017 so far
- Cross referencing of spigot and pipe programme data with oven phase data
- Shift manager assignment to lead tops work programme
- Compliance with permitted ELV (1% leakage / 99% no leakage)
- Comparison of Battery 1 v Battery 2 environmental performance. Battery 2 showing further improvement for tops emissions
- Content of future Schedule 5 Part A & Part B notifications

Coke oven charging

- CAPEX and Morfa Coke Ovens Life Extension project update
- Replacement and upgrade of charging 'telescope' nozzles: ongoing
- Re-seating of oven charge holes: ongoing
- Renewal of charging 'lid-lifters': ongoing
- Compliance with permitted ELV (<30 seconds visible dust per charge)
- Requirement to notify NRW about breaches of the charging ELV
- Content of future Schedule 5 Part A & Part B notifications

Additional areas of interest

- Coke oven thermal status: ongoing gas flue refurbishment/repair work. Focus on ovens towards the end of both batteries
- Oven cross-wall thermal profiles illustrating positive effects of flue repairs
- Oven gas tracking, coal carbonisation and frequency of 'black pushes'
- Collation and submission of monthly black push data to NRW (2015-17)
- Ram-side coke spillage handling system investment. Scheduled Nov 2017
- Coke-side fume extraction system (Ministerstein) hood and ducting upgrades
- Planned automation of coke pushing
- Proposed demolition of old COG holder: consultation and concept phase

Before attending the Coke Ovens targeted intervention, the inspecting officers observed the main areas of the steelworks from the site road network. At the Coke Ovens, the visual appearance of Battery 1 (viewed from the 'coke' [east] side) was noticeably different to Battery 2. The lack of visible leaks from Battery 1 may reflect the ongoing work by Tata Steel to address fugitive emissions from this location.

We have consolidated our findings and compliance assessments from four targeted coke ovens interventions in 2017/18 in report **CAR_NRW0032996**.

Fugitive dust management: sinter and high line conveyor systems

During this targeted inspection we examined the techniques and controls employed on the conveyors and screens between the sinter plant and ferrous stockhouses.

During this intervention the following topics and issues were considered:

- Fugitive dust (foam) suppression system: biofouling of metal pipework, valves and filters
- Fugitive dust (foam) suppression system: ongoing plastic pipework upgrades
- Fugitive dust (foam) suppression system: application of hypochlorite biocide
- Fugitive dust (foam) suppression system: electronic link to sinter control room
- Fugitive dust (foam) suppression system: electronic alerts to highlight faults

- Fugitive dust (foam) suppression system: planned links to PI system
- Progression from reactive/fault-finding maintenance regime towards proactive checks and increased automation
- Trial using atomised water spray on conveyor 1027
- Inspection of active foam application points on conveyors 1027 and 1028
- Mechanical loading of stockpiled sinter (undertaken when stock house feeder conveyors 710 and 715 are offline)

The photos below show:

1. Conveyor 1027 with foam spray application points
2. Conveyor 1028 (stacking conveyor) immediately following foam application
3. Conveyor 1028 stacking arm and sinter stockpile





We have consolidated and summarised our findings and compliance assessments from this inspection and three other targeted fugitive dust management interventions in 2017/18 in report **CAR_NRW0032996**.

Other matters

A proposal to manufacture bioethanol from iron and steelmaking gases is being considered for Port Talbot. The resulting bioethanol can subsequently be used in a blended gasoline fuel mix or be processed into jet engine fuel.

The scheme is currently at concept stage and would require significant sources of fuel/feedstock, heat and power. Photobioreactors and microalgae would be used to process and ferment steelworks gases e.g. CO, CO₂, generating biomass and bioethanol products. If it proves viable, the manufacturing process could represent a cost-effective, alternative fuel source with lower carbon emissions compared with refined fossil fuels. It may also offer another way of recycling surplus steelworks gases which may otherwise be flared and reduce Tata Steel's direct carbon footprint.

Such a process is likely to require environmental regulation (possibly as a chemical installation). NRW would be able to provide a limited amount of free pre-application advice in support of any permit application process.

Conclusions and further actions required

In respect of the following works areas:

- Sinter Plant
- Coke Ovens
- Fugitive Dust Management & Control

We have consolidated and summarised our findings and compliance assessments from this intervention and three subsequent targeted visits during 2017/18 in report **CAR_NRW0032996**.

The dust (foam) suppression systems at the sinter and high line conveyors were operating at the time of inspection. Sinter was being stockpiled via the 1028 conveyor due to a blast furnace outage. The stock house feeder conveyors were offline, and their foam systems were therefore

not inspected.

A proposal to produce bioethanol from iron and steelmaking gases is being considered for Port Talbot. The proposal is currently at concept stage. Such a process is likely to require environmental regulation and NRW would be able to provide a limited amount of free pre-application advice in support of any permit application process.

[ENDS]

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0032995**

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Site	Port Talbot Steel Works	Permit Ref	BL7108IM
Operator/Permit holder	Tata Steel UK Limited	Date	23/11/2017

Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition. 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.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			

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 verbally or 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 that 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 the Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The 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 (eg. 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
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The 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

The 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 fifteen 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 officer's line managers using the informal appeals procedure. 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 607 0987.

Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.