

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	3 December 2014	Time in	09.30 Out 15.30
What parts of the permit were assessed	See below		
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 November 2015

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	A	
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	A	
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

-

Total compliance score
(see section 5 for scoring scheme)

-

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 steel works 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 was arranged as a follow-up to our previous inspection at the Basic Oxygen Steelmaking (BOS) plant on 7 November 2014 (CAR 5787). Our objective was to discuss current steelmaking operations in more detail with the new plant manager, Pieter Broersen. A site inspection of the BOS, Secondary Steelmaking and Continuous Casting (Concast) plant operations was also undertaken.

Tata also requested a meeting to discuss Large Combustion Plant (LCP) monitoring arrangements and National Emissions Reduction Plan (NERP) reporting for the steelworks' power plant. This discussion formed the first part of our visit.

Person(s) present

Tata Steel	Richard Leonard (SHE Team)	NRW	Mark Broom
	Jason Heatman (SHE Team)		Doug Cowie
	Georgina Brooks (SHE Team)		Guy Baskerville
	Sean Langstone (Energy Dept)		
	Hywel Woolf (Steel plant)		
	Pieter Broersen (Steel plant)		

Large combustion plant

Tata has had problems with its Codel monitors on boilers 6 and 7 – NERP/LCP Plant 61. They have been installed to British Standard (BS) EN14181 but the monitors are currently failing on the QAL3 tests and therefore Tata cannot meet the requirements to start its QAL2 assessments. Tata has also had problems with the zero and span checks. Tata has asked Codel to service these monitors but Codel says it has 'lost' its service engineers. As a result, Tata has had to invalidate a large amount of data for boilers 6 and 7. As in previous years, the company can fall back on using estimation factors for its NERP releases. As more than 10 days of monitoring data have been invalidated, Tata should have submitted its plans to NRW outlining how it proposes to get back into monitoring compliance. These invalidation logs and associated remedial action plan submissions will be reviewed at our 2015 NERP audit. Tata's intention is to develop an action plan and to bring in Codel to train Tata's maintenance staff so they can carry out their own routine maintenance of these continuous emission monitors (CEMs).

Boiler 3

All the other boilers have applied to be in the Transitional National Plan (TNP). Boiler 3 is classed as new plant however and cannot enter the TNP. This means that from 1 January 2016 it will have to comply with the Emission Limit Values (ELVs) in Annex V of the Industrial Emissions Directive (IED). The TNP plant will have to comply with this directive from 1 July 2020.

The problem is that for the steelworks the boilers are multi-fuelled and IED says that the ELVs have to be set using IED Article 40(1). As the proportion of fuels on the boilers changes, the ELV will change and become dynamic. In the draft consolidated permit, Tata will see an improvement item asking them how they are going to comply with a dynamic ELV for this boiler and for the TNP plant boilers from 1 July 2020.

Steel (BOS) plant

Pieter Broersen is now managing the steel plant operations. Pieter has a wealth of steelmaking experience from his work in Holland. He has been in the UK for around a year working on a range of topics for Tata. There have been a number of operational problems at the steel plant recently such as the converter explosion and fire, slops and dust collection problems. The plan is to improve the control and operational consistency across the steel plant.

BOS converter explosion and fire

On Thursday 18th September 2014 at around 15.00hrs there was an explosion and fire inside the steel plant at Port Talbot. Fortunately no one was hurt and fire was extinguished quickly. The dust plume from the fire was highly visible but was of short duration and was blown out to sea. Tata formally notified us about this incident in line with the requirements of its permit conditions.

At the time of the explosion, the steel plant was using a 100% hot metal charge in its converters. This recognised operational practice/technique replaces the cold scrap metal element of the charge with hot metal during periods of high tonnages of standing hot metal. The aim of the practice is to avoid plating iron which has the potential to generate its own problems with emissions. The 100% hot metal steel making technique is used in India (Jamshedpur) and at Ijmuiden, Gent and elsewhere in Europe.

The explosion was initially attributed to the use of the 100% hot metal charging practice. Tata's investigation has found that there were operational problems with the previous charge for this particular converter. The previous charge had to be blown several times before the molten steel met the specification. When the slag was tipped out of the converter, some residue was left behind and as the batch had been blown several times the slag was saturated with gas. The current thinking is that when the 100% hot metal charge was poured into the converter, it reacted with the gassified slag and the gas was released rapidly taking the molten iron out of the mouth of the converter.

There have been similar events elsewhere where this practice has been used. The incomplete removal of slag from the previous charge is a potential root cause of this event. The previous standard practice at Port Talbot was after the molten steel has been tapped, the converter was tilted to pour out the slag and tipped back to the charging position; whereas in Ijmuiden the practice is to automatically rotate the converter 360° to ensure it is empty of slag. This Dutch practice ensures that the converter is empty and ready for the next charge. This has now been adopted in Port Talbot, although at the time of inspection Tata had not restarted the use of the 100% hot metal charge technique nor are there any plans to do so in the short term.

Other changes to operational practices

Due to the build-up of high zinc reverts, the steel plant has implemented an extended trial using low zinc scrap at the steel plant. Combined with stopping the use of WOBs – (waste oxide briquettes) as the coolant in the steel conversion process, this will reduce the zinc content of the BOS plant dusts collected in the various dust collection systems. The aim of these changes is to recycle all these steel plant dusts back into the iron making process without causing an excessive build-up of zinc within the iron and steel processes. With this approach dry rubble iron ore replaces the use of WOBs at the BOS plant. Again this is a strategy used in Holland to maximise reverts reuse in the sinter plant and to minimise zinc loadings into the whole iron and steel making process. The strategy is subject to review by Tata.

Slops

Based on complaints and observations there are more slops being seen in 2014 compared to previous years. Tata has been trialling a slop prediction model at Scunthorpe steelworks. Once fully developed this model will transfer to Port Talbot and elsewhere in the Tata Group. In the meantime, Tata Port Talbot have also now automated the anti-slop response system.

Dust collection problems

Due to successive investments, the steel plant dust collection systems have received additional improvements without optimising the collection efficiencies and flows within the system. Recently one of the Hot Metal Pouring (HMP) bay fans failed catastrophically so there is now only one fan dedicated for the HMP bay. It has been supplemented by using the main de-dust fans and adjusting its dampers and damper controls. Tata estimate that it will take several months to get the broken HMP Bay fan and its housing replaced. The steel plant manager is keen to look at the existing de-dust system during this time to ensure it is operating efficiently and if it can be used in more targeted way. The steel plant dust collection system capital investment project will also help with the dust collection problems and also enable Tata Port Talbot to demonstrate compliance with the **Best Available Techniques (BAT) conclusion number 78.**

There are a number of cladding sheets missing from the ends of the steel plant. Tata need a plan to replace any missing sheets. Initial estimates of the remedial work is around £250k. It appears from historic photos of the BOS plant that these sheets may have been removed for apparent safety reasons. The missing sheets have not been scored as a compliance (CCS) issue on this occasion, but is reminded of the requirements of BAT conclusion 78 (BOS Plant secondary emissions). [Tata needs to either confirm the reason\(s\) for the continued practice of having high level ventilation or develop a plan to replace the missing sheets and ensure that the steel plant building is 'dust tight'.](#)

Steel slag handling

The management of steel (BOS) slag was discussed and operations at Ijmuiden and Port Talbot were compared. At Port Talbot, BOS slag is loaded into pots using a front-end loader, while at Ijmuiden the process is done via a conveyor belt. This practice is designed to protect the slag pots with dry BOS slag. There is the potential to minimise emissions from BOS slag loading if the conveyor belt approach is adopted at Port Talbot, although this would require additional infrastructure which would carry an associated investment cost.

Another potential way of minimising fugitive dust emissions from slag handling relates to the weathering of stockpiled BOS slag. Shortening or eliminating the weathering time reduces the potential for wind-borne dust from the slag stockpiles. A common use of weathered BOS slag is in the manufacture of aggregates and Tata is aware of certain European steel slag products that do not require weathered slag. NRW appreciates that any initiatives in this area would need to be pursued with the co-operation of Tata's contractor, Cambrian Stone Ltd (a subsidiary of Tarmac). We will consider re-visiting this during a future visit to the steelworks.

Management of de-sulph slag was discussed in our previous CAR Form 5787.

Plant inspection

The steel plant was inspected - the photos below show the ladle repair bay on the left and the desulph station to the right.



The below left photo shows a picker cleaning the nose or mouth of the BOS converter. A clean nose/mouth is needed to help reduce fume releases from the converter vessel. This machine has replaced the use of a pecker which had the potential to damage the converter's refractory lining. The picker 'pricks' off the slag build-up rather than pecking the residue; it causes less damage to the converter and has improved the surface condition and therefore seal of the mouth/nose of the converter. On the right red hot slabs can be seen coming out of the Continuous Casting (Concast) plant. The steel plant floor area, secondary steel making and the top of the Concast formed part of the inspection. No compliance issues were identified during our visit.



[END OF SECTION 2]

	EPR Compliance Assessment Report	Report ID: 05788
This form will report non-compliance with your permit as determined by an NRW officer		
Site	Tata Steel Port Talbot steelworks	Permit
Operator/ Permit	Tata Steel UK Ltd	Date
		BL7108IM (as amended) 17 November 2015

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. 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			
B1	N/A	Action 1: Tata need to either confirm the reason(s) for the continued practice of having high level ventilation or develop a plan to replace the missing sheets and ensure that the steel plant building is 'dust tight'.	5 February 2016

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**.