

Natural Resources Wales permitting decisions

Tata Steel UK Limited

Decision Document

(Morfa Hazardous Landfill)

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Variation

Variation number is: **EPR/BW2692IM/V005**

The Operator is: **Tata Steel UK Limited**

The Installation is located at: **Morfa Hazardous Landfill, Port Talbot Installation, Port Talbot Works, Port Talbot, West Glamorgan, SA13 2NG**

We have decided to issue a variation for the Morfa Hazardous Landfill Site operated by Tata Steel UK Limited.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements, and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined;
- provides a record of the decision-making process;
- shows how all relevant factors have been taken into account; and
- justifies the specific conditions in the permit other than those in our generic permit template.

Key issues of the decision

Minor Non-technical Variation Application

In early 2020 NRW undertook a part review of the site's monitoring reports submitted over the 2019 period (CAR_NRW0036307). During this assessment it was noted that there was significant confusion over the monitoring requirements relating to this permit (including the monitoring for the adjacent Morfa landfills (Closed and Non-Hazardous)).

The main issue appeared to be discrepancies in the monitoring requirements and emission limits specified within the landfill permits versus the current monitoring programme adopted by the Operator.

This situation has arisen over a number of years and for a number of reasons. Although historically informal agreements with the regulatory officer may have been provided, the Operator adopted some monitoring changes (including changes to emission limits) without the requisite permit variation (to reflect the changes agreed).

It is believed that the Environment Agency Wales (prior to the establishment of Natural Resources Wales) also agreed to changes to the groundwater emission limits, monitoring locations and parameters in response to the 2012 Hydrogeological Risk Assessment (HRA) review. However once again, this was never formalised.

The 2017 HRA (and 2017 Annual Monitoring Interpretation Report) has since made further changes to the permit's monitoring regime. These have been assessed by NRW and have been accepted in principle with the local Regulating Officer (CAR_NRW0036690).

During 2020 NRW and the Operator discussed the permit's monitoring tables. The purpose of these discussions was to clarify the changes and updates, followed by the

Operator applying to vary their permit. This would ensure that the permit's monitoring tables are clear and consistent in future, and reflect future monitoring.

The tables have since been agreed between the Operator and the local regulating officer and confirmed in writing by NRW within CAR_NRW0037379 issued 25 January 2021. A permit variation application was submitted at the beginning of the year to regularise the permit with the newly agreed monitoring programme.

Following additional information provided by the Operator during the duly making stage, the application was duly made on 7 July 2021.

Consultation

No consultation has been carried out, as this is a minor non-technical variation, and the site is not registered as a Site of High Public Interest (HPI Site).

The Facility

The Facility in its entirety consists of the whole steel works including the Morfa non-hazardous and Morfa hazardous landfills. This permit is for the Morfa Hazardous Landfill which is an existing in-house Schedule 1 listed installation activity which accepts waste produced exclusively by Tata Steel UK Ltd. The hazardous wastes are mainly industrial sludges or slurries arising from steel production at Port Talbot Steel Works, South Wales. The landfill is constructed in accordance with the requirements of Schedule 2 of the Landfill Regulations 2002. The permitted maximum input capacity is 75,000 tonnes per annum. The projected lifespan is expected to be around 20 years.

The western boundary comprises a series of coastal barrier dunes on the seaward edge, whilst the southern edge of the site is within 130 metres of the Kenfig National Nature Reserve, both of which are part of an EC protected nature reserve. The eastern boundary is defined by the low-lying Margam Moors which is a registered SSSI.

Proposed changes

The changes proposed are summarised below:

- The permit has been consolidated to incorporate the original permit and all subsequent variations. The varied permit is now based on our standard landfill template. The original technical decisions made during determination of the application have not been revisited, other than the changes specified below (NB. We note that the current permitted activities do not include deposit of waste for recovery activity. This activity has not been added to the permit, as the Operator has not applied for it, hence standard conditions associated with deposit of waste for recovery for restoration purposes are not included as part of this consolidated permit);
- This permit variation will regularise the emissions monitoring tables as described within Schedule 3 of the permit, to reflect the currently agreed monitoring programme adopted by the Operator, and subsequently agreed with the Local Regulating Officer for the site. The formatting of all Conditions and Tables within the permit now reflect NRW's modern style template;
- On 1 April 2021 the registered office address for Tata Steel UK Ltd was changed from 30 Millbank London SW1P 4WY to 18 Grosvenor Place London SW1X 7HS. The permit has been updated to reflect the new address;
- References within the Introductory Note to other Part A Installation Permits relating to this Installation have been updated. This includes the removal of the Permit EPR/BX6987IB (Operator referenced as Suncoke), as this Permit was surrendered in December 2012;
- The Operator has produced an updated Site Monitoring Plan, illustrating the locations of all current monitoring points associated with the site's on-going monitoring programme. Monitoring wells referenced on the original permit that were never installed have been removed from the plan, whilst new monitoring point locations (as agreed with the NRW) have been added to reflect the

existing monitoring regime. The new Site Monitoring Plan referenced “2111r1v1d1220 MHL Monitoring Network December 2020” is now referenced within Schedule 3 of the permit;

- The Final Restoration Deposits Drawing referenced within Condition 2.6.5 (formally condition 2.8.8) has been updated following receipt of a revised drawing from the Operator;
- Operational documents submitted in support of this variation, as well as previous variations have been added to Tables S1.2;
- Some of the descriptive wording within Schedule 2 has been updated to reflect modern European Waste Catalogue (EWC) descriptions;
- An additional four EWCs have been added to the permitted waste types specified within Schedule 2 of the permit. The primary use of these codes will be the landfilling of silica based refractories from the relining of both metallurgical furnaces and other non-metallurgical sources, such as boilers and blast furnace hydrocyclone material;
- Monitoring point reference descriptions have been updated within Table S3.1 (formerly Table S4.1), to reflect the new Site Monitoring Plan referenced “2111r1v1d1220 MHL Monitoring Network December 2020”;
- Redundant parameters for trigger levels for emissions to Groundwater specified within Table S3.2 (formerly Table S4.2) have been removed, whilst Chloride and Arsenic have been added;
- Landfill gas monitoring point reference descriptions have been updated within Table S3.4 (formerly Table S4.4);
- Leachate monitoring point reference descriptions and monitoring suites have been updated within Table S3.5 (formerly Table S4.5);
- Surface water monitoring point reference descriptions and monitoring suites have been updated within Table S3.6 (formerly Table S4.6);
- Groundwater monitoring point reference descriptions and monitoring suites have been updated within Table S3.7 (formerly Table S4.7);

- Former Table S4.8 requiring particulate matter in ambient air monitoring has been removed from the permit, as it has been agreed with NRW that dust deposition can not effectively be linked directly to the landfill operations, given other nearby sources of dust, including a series of coastal sandy dunes situated to the western boundary of the landfill site;
- Table S4.1 (formerly Table S5.1) has been updated to reflect updated monitoring point reference descriptions and changes to reporting periods updated within Schedule 3; and finally
- Table S4.4 (formerly Table S5.4) has been updated to reflect updated reporting forms.

Leachate Levels

Table S3.1 which describes Leachate level limits and monitoring requirements has been updated to reference the new Site Monitoring Plan, detailing leachate monitoring points as per the agreed on-going monitoring programme.

Table S3.1 Leachate level limits and monitoring requirements				
Monitoring point reference/ Description	Limit	Monitoring frequency	Monitoring method	
L17 and GA30 as shown on as shown on Drawing "2111r1v1d1220 MHL Monitoring Network December 2020" and all subsequent new leachate monitoring points installed within cells (at least one monitoring point per cell).	1m above base of leachate monitoring point	Weekly (reducing to monthly when landfill is fully capped)	Accurate to $\pm 0.01\text{m}$ relative to Ordnance Datum. Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document 'Guidance on monitoring of landfill leachate, groundwater and surface water' (LFTGN02)	

Trigger Levels for Emissions into groundwater and monitoring requirements

Some of the emission limits for trigger levels set for groundwater have been altered. The changes were first suggested in 2017 as part of the Hydraulic Risk Assessment (HRA) and Annual Monitoring Report submitted to NRW at the time. Groundwater limits for both Chloride and Arsenic have been set for all of the shallow aquifer boreholes, with old/redundant limits having been removed as they were not representative of suitable triggers for identifying an issues with the landfill.

Table S3.2 Trigger levels for emissions into groundwater and monitoring requirements				
Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency
BH12S, BH25S, BH26S, BH28S, BH29S (Shallow Aquifer) as shown on as shown on Drawing "2111r1v1d1220 MHL Monitoring Network December 2020"	Chloride	200 (µg/l)	Spot Sample	Quarterly
	Arsenic	50 (µg/l)		

Landfill gas from capped surfaces

As part of the permit variation application, the Operator requested that changes were made to the Monitoring Standards and methodology stated within Table S3.3 (Formerly Table 4.3). The Operator stated that as written, it was not possible to comply with the methodology requirements using conventional technique, without incurring significant cost. The Operator advised that the standard technique for surveys of capped surfaces is a gazmat survey, which allows for specific detection of methane emitted from the surface of the landfill. The output of the survey gives a number of readings across the site in ppm of methane. It does not however give a flux value e.g. ppm per m² per second as currently stated by the permit. The only way to obtain a ppm per m² per second reading is through flux box monitoring. Tata steel requested

that in place of flux box monitoring, the methodology was changed to a Gazmat/FID walkover survey.

The monitoring standard and methodology stated within Table S3.3 is current industry standard, and the same condition is applied across the landfill sector. Any changes agreed to this permit would not represent a consistent approach being applied by NRW, and could be deemed as placing other landfill Operators at a commercial disadvantage. Changes to standards of monitoring or methodology is a Policy issue which would affect the whole sector. NRW have thus not agreed to the Operators request for changes to this table, with the wording remaining as per the existing permit, in order to ensure a consistent regulatory approach is being applied.

Table S3.3 Landfill gas from capped surfaces – limits and monitoring requirements				
Monitoring point Ref. / description	Parameter	Monitoring frequency	Other specifications	Monitoring Standard or method
Permanently capped zone	Average methane flux and total	Annually*	Average zone emission rate of 0.001 mg/m ² /second	Flame ionisation detector walkover, flux

Table S3.3 Landfill gas from capped surfaces – limits and monitoring requirements				
Monitoring point Ref. / description	Parameter	Monitoring frequency	Other specifications	Monitoring Standard or method
Temporarily capped zone	methane emission		Average zone emission rate of 0.1 mg/m ² /second	box or as otherwise agreed in writing with Natural Resources Wales. Alternatively, as per LFTGN 07 Version 2, March 2011

Landfill gas - other monitoring requirements

Table S3.4 (formerly Table S4.4) which describes the monitoring suite requirements for landfill gas has been updated to reference the new Site Monitoring Plan, detailing landfill gas monitoring points locations as per the agreed on-going monitoring programme.

Table S3.4 Landfill gas – other monitoring requirements			
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
L17 and GA30 as shown on Drawing “2111r1v1d1220 MHL Monitoring Network December 2020” and all subsequent new monitoring points installed within cells	Methane	Quarterly during post closure phase	Unless otherwise agreed in writing with the Natural Resources Wales monitoring methods used shall be in accordance with Agency guidance document ‘Guidance on the management of landfill gas’ (LFTGN03)
	Carbon Dioxide		
	Oxygen		
	Hydrogen Sulphide		
	Atmospheric pressure		
	Differential pressure		
	Meteorological Data		
	Gas Flow		
	Gas Volume		

Leachate – other monitoring requirements

The leachate monitoring suite has been updated primarily to move some parameters from the annual suite into the quarterly suite, and vice versa, to concentrate on the most important chemical parameters. Some monitoring wells referenced on the original permit plan that were never installed have been removed, whilst new monitoring points have been added to reflect the existing monitoring network.

Table S3.5 Leachate– other monitoring requirements			
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
L17 as shown on Drawing “2111r1v1d1220 MHL Monitoring Network December 2020”	pH	Quarterly	Unless otherwise agreed in writing by Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document ‘Guidance on monitoring of landfill leachate, groundwater and surface water (LFTN02)
	Electrical Conductivity		
	Ammoniacal Nitrogen		
	Arsenic		
	Boron		
	Copper		
	Vanadium		
	Calcium		
	Nitrate		
	Nitrite		
	Sodium		
	Fluoride		
	Potassium		
	Phosphate		
	Total Alkalinity		
	Chloride		
	Cadmium		
	Molybdenum		
	Selenium		
Iron	Annual		
Lead			

Table S3.5 Leachate– other monitoring requirements			
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
	Magnesium		
	Mercury		
	Organohalogenes (volatile organic compounds)		
	Semi-Volatile Organic Compounds		
	Sulphate		
	Total Chromium		
	Zinc		

Surface water – other monitoring requirements

The surface water monitoring requirements as stated within Table S3.6 (formerly Table S4.6) have been updated. Monitoring points that were referenced on the original permit plan but never installed have been removed, whilst new monitoring points have been added to reflect the existing monitoring network. Monitoring parameters have also been updated to reflect the agreed monitoring regime.

Table S3.6 Surface water – other monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	
SW13, SW14 and SW15 as shown on Drawing “2111r1v1d1220 MHL Monitoring Network December 2020”	pH	Quarterly	Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document ‘Guidance on monitoring of landfill leachate, groundwater and surfacewater’ (LFTGN02)	
	Electrical			
	Conductivity			
	Ammoniacal			
	Nitrogen			
	Arsenic			
	Boron			
	Copper			
	Vanadium			
	Calcium			
	Nitrate			
	Nitrite			
	Sodium			
	Fluoride			
	Potassium			
	Phosphate			
	Total Alkalinity			
	Chloride			
	Cadmium			
	Molybdenum			
	Selenium			
	Iron	Annually		
	Lead			

Table S3.6 Surface water – other monitoring requirements					
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method		
	Magnesium				
	Mercury				
	Organohalogenes (volatile organic compounds)				
	Semi-Volatile Organic Compounds				
	Sulphate				
	Total Chromium				
	Zinc				

Groundwater – other monitoring requirements

The groundwater monitoring suite has been updated primarily to move some parameters from the annual suite into the quarterly suite to concentrate on the most important chemical parameters. Some monitoring wells were on the original permit plan but were never installed and therefore the monitoring points have been updated to reflect the existing monitoring network.

Table S3.7 Groundwater – other monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	
BH12S, BH25S, BH26S, BH27S, BH28S, BH29S (Shallow Aquifer) as shown on Drawing “2111r1v1d1220 MHL Monitoring Network December 2020”	Groundwater Level	Quarterly	Unless otherwise agreed in writing with Natural Resources Wales, monitoring methods used shall be in accordance with Environment Agency document ‘Guidance on monitoring of landfill leachate, groundwater and surface water’ (LFTGN02)	
	pH			
	Electrical Conductivity			
	Ammoniacal Nitrogen			
	Arsenic			
	Boron			
	Copper			
	Vanadium			
	Calcium			
	Nitrate			
	Nitrite			
	Sodium			
	Fluoride			
	Potassium			
	Phosphate			
	Total Alkalinity			
	Chloride			
	Cadmium			
	Molybdenum			
	Selenium			
	Iron	Annually		

Table S3.7 Groundwater – other monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	
BH12S, BH12D, BH25S, BH25D, BH26S, BH26D, BH27S, BH27D, BH28S, BH28D, BH29S, BH29D Shallow and Deep Aquifer as shown on Drawing “2111r1v1d1220 MHL Monitoring Network December 2020”	Lead			
	Magnesium			
	Mercury			
	Organohalogens			
	(Volatile Organic Compounds)			
	Semi-volatile Organic Compounds			
	Sulphate			
	Total Chromium			
	Zinc			

Particulate matter in ambient air – limits and monitoring requirements

Table S4.6, along with all limits and monitoring requirements associated with particulate matter in ambient air have been removed from the permit. This is because dust deposits could not be linked directly to the landfill as there are other multiple potential sources of dust surrounding the landfill. The site is located adjacent to a series of coastal sandy dunes situated to the western boundary of the landfill site. NRW have agreed that the monitoring requirements stated within the original Table S4.6 did not provide any useful information, and is thus no longer a requirement of the varied permit.

Legislation

The variation will be issued, under Regulation 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope.

We address the legal requirements directly where relevant in the body of this document. NRW is satisfied that this decision is consistent with its general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources. In particular, NRW acknowledges that it is a principle of sustainable management to take action to prevent significant damage to ecosystems. We consider that, in issuing the variation a high level of protection will be delivered for the environment and human health through the operation of the facility in accordance with the permit conditions.

NRW is satisfied that this decision is compatible with its general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources.

Reporting

Reporting requirements stated within Table S4.1 have been updated to reflect the new monitoring point references and reporting frequencies stated within Schedule 3.

Reporting forms as referenced within Table S4.4. have also been updated to reflect the updated monitoring regime.

OPRA

There are no changes to the Opra score for the site, as a result of this variation. The Opra score at permit issue remains 147.