

29th January 2016

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Our Ref: W:\Environmental\IPPC\Permit TP3639BH\Improvement Programme\NMS Improvement Programme\IC3 – BAT Review\Response To Environmental Permit Improvement Condition IC3.doc

Dear Dr Richards,

RE: Tremorfa Melt Shop EPR Permit TP3639BH Improvement Programme IC3

In accordance with the Tremorfa Melt Shop Environmental Permitting (EPR) Permit TP3639BH, please find below our formal response of the Improvement Programme Reference IC3, as specified in table S1.3 *'Improvement Programme Requirements'*.

Introduction

Tremorfa Melt Shop is regulated under section 12 of the Environmental Permitting (England and Wales) Regulations 2010 (as amended) to operate an installation which carries out activities as defined within Section 2.1 A(1)(b) *'Producing, melting or refining iron or steel or any ferrous alloy, including continuous casting'*. As such the company is permitted in accordance to the terms and conditions of EPR Permit TP3639BH.

The company is required to satisfy the improvement programme conditions as stated in Table S1.3. This report is intended to satisfy improvement condition reference IC3 *'Progress to achieving BAT conclusions AELs by March 2016.'*

Improvement IC3 specified in Table S1.3 states:

'The operator shall submit, for approval by Natural Resources Wales, a report setting out progress to achieving the BAT conclusions AELs where BAT is currently not achieved, but will be achieved by March 2016. The report shall include, but not limited to, the following:

- 1) Current performance against the BAT Conclusion AEL.*
- 2) Methodology for reaching the AELs.*
- 3) Associated targets / timelines for reaching compliance by 8th March 2016.*

The report shall address the following BAT Conclusions: 10, 16 and 89.'

1.0 Current performance against the BAT Conclusion AEL

BAT no.	Topic	Substance	AEL	Reference Period	Current Performance (under normal operational conditions)
88	Air	Particulates	<5 mg/Nm ³	Daily Average	Max daily average 5.14 mg/m ³ for Q1-Q4 2015 ¹
88	Air	Mercury	<0.05 mg/Nm ³	Spot Sample	0.027 mg/m ³ (2014) 0.010 mg/m ³ (2015)
89	Air	PCDD/F	<0.1 ng I-TEQ/Nm ³	6-8 hrs random sampling	0.038 ng/m ³ (2014) 0.019 ng/m ³ (2015)
92	Water & Waste Water	Suspended Solids	<20 mg/l	Spot Sample	5.0 mg/l (2015) 1 mg/l (2014)
92	Water & Waste Water	Iron	<5 mg/l	Spot Sample	0.62 mg/l (2015) 0.23 mg/l (2014)
92	Water & Waste Water	Zinc	<2 mg/l	Spot Sample	0.05 mg/l (2015) 0.173 mg/l (2014)
92	Water & Waste Water	Nickel	<0.5 mg/l	Spot Sample	<0.003 mg/l (2015) 0.003 mg/l (2014)
92	Water & Waste Water	Total Chromium	<0.5 mg/l	Spot Sample	<0.002 mg/l (2015) 0.002 mg/l (2014)
92	Water & Waste Water	Total Hydrocarbons	<5 mg/l	Spot Sample	<0.6 (mg/l) (2015) 0.6 mg/l (2014)

¹ Maximum daily average of 5.14 mg/m³ occurred on 11 May 2015, next highest daily average was 4.59 mg/m³ on 7th December 2015. Compliant for 327 out of 328 operational available days in 2015.

Table 1: Performance vs BAT AELs

2.0 Methodology for reaching the AELs

As observed in Table 1, CELSA meet BAT AELs for air and water parameters based on 2014 and 2015 performance.

3.0 Associated targets/timelines for reaching compliance by 8th March 2016

CELSA will be compliant by 8th of March 2016 as outlined in Section 1.0 and 2.0.

4.0 Review of BAT Conclusions 10, 16 and 89

“10. BAT is to use the best operational and maintenance practices for the collection, handling, storage and transport of all solid residues and for the hooding of transfer points to avoid emissions to air and water.”

The handling, storage and transport of solid residues is undertaken by the world leading specialist contractor Harsco, using extensive formal procedures that are part of Harsco’s ISO 14001 certified EMS.

Transfer points for slag handling are covered or alternative dust suppression methods are used (water sprays), hooding is only applied to the slag collection point under the EAF.

BAT requires ‘hooding of transfer points’ to avoid emissions to air. Slag quenching is carried out in a ‘cow shed’ with integral water sprays. Numerous improvements, including increasing the number of sprays, have been made in the last few years to improve the effectiveness of the dust suppression.

The cooled slag is then loaded by mechanical shovel onto a lorry for transfer to the slag weathering area, which is completed during active use of water sprays.

BAT may require dedicated hoods to avoid releases to air. This would require significant capital expenditure and in the current exceptionally difficult market, costs are disproportionate to the likely benefit.

Significant improvements have been made to activities at the Mineral Site to reduce diffuse dust emissions associated to slag handling and processing. These include the relocation of the slag lagoons away from the site boundary and at a lower site elevation to prevent lift-off and carryover from the installation boundary. Additionally, lagoon sprays and a bowser are used during the tipping of slag at the Mineral Site to further prevent lift off. Monitoring of wind direction is also employed and tipping is prevented if the wind direction will cause off site exposure to dust.

EAF dust is collected in impermeable big bags with extraction at the bag loading point.

“16. BAT is to determine the order of magnitude of diffuse emissions from relevant sources by the methods mentioned below. Whenever possible, direct measurement methods are preferred over indirect methods or evaluations based on calculations with emission factors.

- *Direct measurement methods where the emissions are measured at the source itself. In this case, concentrations and mass streams can be measured or determined.*
- *Indirect measurement methods where the emission determination takes place at a certain distance from the source; a direct measurement of concentrations and mass stream is not possible.*
- *Calculation with emission factors.”*

The emission control technique in the steelmaking process at the Melt Shop is 4th hole extraction with canopy hood, thus meeting BAT for reducing diffuse process emissions.

Direct measurement is undertaken for stack releases of diffuse emissions for the determination and reporting of mass stream magnitude.

Diffuse emission measurement from material handling sources is not possible. However, a TOPAS dust monitor at a local receptor and the use of a 'Frisbee' dust deposition gauge, provides sufficiently robust data.

"89. BAT for the electric arc furnace (EAF) primary and secondary dedusting (including scrap preheating, charging, melting, tapping, ladle furnace and secondary metallurgy) is to prevent and reduce polychlorinated dibenzodioxins/furans (PCDD/F) and polychlorinated biphenyls (PCB) emissions by avoiding, as much as possible, raw materials which contain PCDD/F and PCB or their precursors (see BAT 6 and 7) and using one or a combination of the following techniques, in conjunction with an appropriate dust removal system:

I. appropriate post-combustion

II. appropriate rapid quenching

III. injection of adequate adsorption agents into the duct before dedusting.

The BAT-associated emission level for polychlorinated dibenzodioxins/furans (PCDD/F) is <0.1 ng I-TEQ/Nm³, based on a 6 – 8 hour random sample during steady-state conditions. In some cases, the BAT-associated emission level can be achieved with primary measures only."

It has been demonstrated that CELSA will meet the <0.1ng I-TEQ/Nm³ AEL based on dioxin results from 2014 and 2015 A1 stack emissions results, achieving an average of 0.03ng I-TEQ/Nm³ over the past two years.

5.0 Conclusions

CELSA are confident that all BAT Conclusion AELs will be met and CELSA will be compliant against BAT Conclusions 16 and 89. This has been concluded from the comparison of previous monitoring results against new AELs. The significant investment that would be required in the hooding of transfer points of solid residues to meet BAT Conclusion 10 would result in a disproportionate cost given the current economic climate of the UK steel sector.

If you require any further information or should have any further questions, please do not hesitate to contact me.

Yours sincerely,



Richard Lewis
Environmental Manager