

11th September 2018

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Our Ref: W:\Environmental\IPPC\Environment Agency Reporting\Permit Reporting\New Melt Shop\Quarterly\2018\CO Breaches Report\CO Breaches Review - September 2018.doc

Dear Dr Richards,

RE: Tremorfa Melt Shop EPR Permit TP3639BH CO Breaches Review

In accordance with the Tremorfa Melt Shop Environmental (EPR) Permit TP3639BH, please find below our formal response to Compliance Assessment Report (CAR) TP3639BH/CAR_NRW0032940. An action was raised and it stated: *"Celsa are required to provide a report on Action Plan progress"* for the persistent CO breaches.

1.0 Fume Control System Improvements – Action Plan Progress

Please find below the identified improvements (that were recommended in February 2018) together with an update in terms of implementation:

No.	Action Item	Implementation Date	Progress
1	East End Extraction damper - Make sure the East Damper is mostly closed to focus exhaust capacity to higher concentration fumes and most effective ventilation.	February 2018	COMPLETE: The closing of the damper has been trialled in various positions and the potential impacts observed. Following the trials, there is now a far greater understanding and control over the positioning, in particular when to close the damper at specific times within the process.
2	Utilise EFSOP Measurements - move EFSOP monitor in front of the operator.	March 2018	COMPLETE: This has been implemented and placed in the EAF control room.
3	System Controls Update – make sure Primary Damper is not fully closed during Scrap Charging operations (leave at least 20% open for some flow to prevent high temp and CO accumulation in the	March 2018	COMPLETE: The primary damper has been modified so that there is a delay in the automated closing of the damper to allow this action to be realised.

quenching tower).		
4	Water spray control - Ensure that water sprays are only ON when EAF is in "Power ON" mode.	March 2018
5	Evaluate Steps to minimise splashing in EAF (for example, keep steady slag line, review CoJets usage when tilted, lance angle vs bottom)	April 2018
6	Primary System Maintenance Review - ensure no holes, air leaks in the primary (4th hole) system, as well as no flow cross section restrictions that increases system pressure loss. Most critical sections are closer to the booster fan.	February 2018 (Temporary repairs) May 2018 (summer shutdown, replacement expansion joints)
7	Furnace Practice Optimisation – optimise EAF furnace practice to minimise off-gas energy peak losses without affecting the power ON time (for example, use various programs for CoJets and C injection, depending on the scrap type in use).	November 2018
8	Combustion Gap Pressure - install new transmitter and trend pressure reading at combustion gap to ensure gap will not operate at positive pressure at any time.	July 2018
9	PLC Information - the fume control system should continuously track (logged) and trend all available pressure and temperature measurements for a quick weekly review and comparison to the base line. Also, would be used for easy performance analysis.	July 2018
10	Ensure Original Design Basis for Water Sprays - Quenching Tower performance requires 50micron atomization, minimum required water injection, tuned spraying	September 2018

pattern, in steps, for only what is actually needed, never to over spray (either variable water flow or nozzle at time)

11 Roof Elbow Combustion Gap Redesign – Feasibility study of installing matching break-flanges (elephant ears) on both roof elbow and T1 duct.	September 2018	ONGOING: Combustion gap position has been optimised based on CO levels. This is monitored and measured regularly to ensure the position is maintained. Installing the elephant ears isn't considered a priority action at the moment.
12 Primary System Downstream Combustion Analysis – Feasibility study of installing downstream CO (and O2) continuous reading to track primary fume control system performance and quickly resolve related issues (options include locations prior to or after the quenching tower – each location has advantages & disadvantages)	December 2018	To be reviewed and updated in December 2018

2.0 Conclusion

CELSA are fully committed to ensuring that CO levels return below the permit limit and by implementing all of the above actions there will be much greater control and understanding on the CO levels generated within the process vs CO discharged to atmosphere. The frequency and number of reportable breaches (Schedule 5 notifications) has significantly reduced since May 2018 but the goal will always be to achieve zero breaches. It is believed that with the implementation of the remainder of the action plan this will become possible and more importantly it will be sustainable.

We trust that this fulfils the requirements for the action identified in CAR_ NRW0032940 but if you require any further information or questions, please do not hesitate to contact me.

Yours sincerely,



Richard Lewis
Environmental Manager