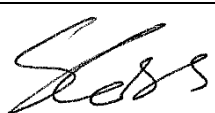


Summary sheet

Permit Number: BW9999IG	Compliance Officer: Stuart Ross & Paul Challenger	
Operator: Kronospan Ltd	Auditor (if different):	
Emission Point(s): A26, A27, A29, A30, A31 & A32	Others Present: Chelsey Barker, Chris Emery	
OMA Sections	SCORE	
OMA 1 – Management of monitoring	56%	
OMA 2 – Periodic monitoring and test laboratories	95%	
OMA 3 – Continuous monitoring	71%	
OMA 4 – Quality assurance	63%	
	OVERALL SCORE	71%
OVERALL SITE ASSESSMENT COMMENTS	Letter	
	Variation	
	Enforcement	
<p>This Operator Monitoring Assessment (OMA) Audit covered, for the first time, emissions to air monitoring at release points A26 (K7 Biomass Boiler), A27 (K8 Biomass Boiler), A29 (MDF 2 Dryer Cyclones), A30 (MDF 1 Dryer Cyclones), A31 (Press Abatement) & A32 (WESP 21 / Dryer No.4).</p> <p>With the exception of deficiencies relating to the implementation of EN14181, continuous emissions monitoring at emission point A27 is completed to an acceptable standard. Improvements to procedures to bring EN14181 into the EMS and ensure QAL2 and AST requirements are implemented will significantly improve the OMA score and secure permit compliance.</p> <p>Periodic monitoring is again completed to an acceptable standard but there are practical challenges associated with the existing monitoring provisions (platforms and access to ports etc) leading to measurement method deviations. However, the measurement uncertainties achieved are within the allowable budgets.</p> <p>This report contains actions and recommendations. Permit non-compliance has been identified and is recorded in Compliance Assessment Report ref. CAR_NRW0041858</p> <p>N.B Permit variation V009 issued May 2023 has amended the monitoring method for Hydrogen Fluoride to bring it line with current guidance.</p>		
		Date of audit: 31/03/23
		Signed: 
		Date: 23/05/23

OMA 1: Management of monitoring		
OMA ELEMENTS	SCORE	COMMENTS
A. Documentation of management system procedures for monitoring	2	Monitoring procedures are available but lack sufficient detail to ensure full compliance with the requirements of EN 14181. Site Specific Protocols (SSPs) are available before monitoring commences. The operator reviews the reports and signs off via email exchange.
B. Organisational structure for monitoring	3	There is an acceptable management structure in place for monitoring issues.
C. Schedules and planning of monitoring, including contingencies	3	The scheduling of monitoring is complex owing to the number of emission points and unpredictable variations in production down time. Scheduling is kept under constant review to ensure monitoring is completed at the required frequency. No issues with data availability, monitoring is rescheduled as required.
D. Monitoring records and use of monitoring data	3	There are no documented procedures for the review of monitoring data. CEMS data is displayed at the control desk with approach to limit alarms. Data is reviewed against permit limits, but better use could be made to optimise process operation and to identify trends.
E. Understanding the requirements of the permit and monitoring methods	3	Whilst there are some deficiencies in emissions monitoring, personnel generally demonstrated a good understanding of the permit requirements, the monitoring arrangements and emissions monitoring in general.
OMA 1 – SCORE	14/25	56%
SUMMARY COMMENTS FOR OMA 1		
As detailed in section 3 of this report, the operator has not until March 2023, completed a QAL 2 exercise on the K8 Biomass Boiler CEMS. Annual Surveillance Testing (AST) has never been completed. This is contrary to EN 14181 and is in breach of permit condition 3.6.1. The root cause of this non-compliance is inadequate monitoring procedures that is in breach of permit condition 1.1.1. Refer Compliance Assessment Report ref. CAR_NRW0041858.		

Action 1 – Review existing monitoring procedures against the requirements of EN14181, also refer to Environment Agency Technical Guidance Note M20 ‘Quality assurance of continuous emissions monitoring systems - application of EN 14181’. Amend accordingly to ensure the requirements of the monitoring standard and your permit are met in full. Provide NRW with a copy of the amended procedure by 31/07/23.

Action 2 – Develop and include within your monitoring procedures, a matrix, or similar, to specify the required reference conditions for each emission point as detailed within Schedule 6 of the permit. Please do so and provide a copy to NRW by 31/07/23.

Action 3 – Implement procedures for the review of emissions monitoring data.

Recommendation - It would be beneficial for personnel with responsibility for monitoring to undertake further formal training

For example, The Source Testing Association (<http://www.s-t-a.org/training/>) holds relevant one day training courses for operators including:

- Regulatory Monitoring Requirements for Process Operators
- BS EN14181 quality assurance of an AMS (covering the CEMs and parallel testing)

OMA 2: Periodic monitoring and test laboratories		
OMA ELEMENTS	SCORE	COMMENTS
A. Sampling provisions	3	Other than emission point A32, the sampling facilities do not fully comply with EN15259 resulting in monitoring deviations. Flow criteria are met in most cases. Refer comments below.
B. Certification of equipment	5	MCERTS certified equipment used by UKAS accredited test laboratories.
C. Measurement methods and standards	3	Methods used are in accordance with the permit. There are some deviations from standard methods due to issues noted with the sampling provisions.
D. Calibration methods	5	Calibration has been carried out under UKAS / MCERTS accreditation.
E. Frequency of maintenance and calibration	5	Maintenance and calibration have been carried out under UKAS / MCERTS accreditation.
F. Reliability of methods and equipment (data availability)	5	Repeat analysis and/or rescheduling of samples due to equipment failure occurs rarely.
G. Breakdown response	5	Monitoring performed by MCERTS accredited test houses with ability to respond to instrument breakdown.
H. Traceability	5	Calibration has been carried out under UKAS / MCERTS accreditation.
OMA 2 – SCORE	38/40	95%
SUMMARY COMMENTS FOR OMA 2		
<p>The standard reference methods specified by the permit have been used as required. Emissions are sampled in triplicate where required, results and uncertainty values are averaged for comparison against the respective ELVs and reporting to NRW.</p> <p>The permit specifies Hydrogen Fluoride method ISO 15713 that has since been superseded by CEN TS 17340. The operator's UKAS accredited test house ATESTA have used the new method, the permit has since been amended to reflect the change of method (variation V009).</p> <p>For formaldehyde, the operator is using CEN / TS 13649 until 30/06/23 when CEN / TS 17638 will be implemented as required by the permit. Both methods are being used concurrently with existing</p>		

compliance reporting against CEN TS 13649. The operator has observed higher formaldehyde emissions using CEN TS 17638 and an apparent lack of correlation between the methods.

Sampling Provisions

Due to restricted access / restricted sampling platform depth at all but emission point A32, sampling facilities do not meet the requirements of EN15259. This is primarily due to legacy monitoring facility design flaws. This leads to deviations from the standard reference methods.

This issue is recognised by Kronospan who have undertaken a review of monitoring platforms/provisions with a view to establish what improvements could be made.

Recommendation 1 – Working with your appointed MCERTS test laboratory, review the monitoring provisions at each emission point and identify and implement improvements where practicable to reduce monitoring deviations and to reduce measurement uncertainty.

Note that all future monitoring platforms and provisions should be installed in accordance with EN15259 and Environment Agency Technical Guidance Note M1.

EN15259 Sampling Plane Validation Criteria are met with the exception of A31 (Press Abatement) and A30 (MDF 1) that exceed the maximum swirl angle. The monitoring facilities for A31 are due to be relocated on a section of horizontal duct that will allow emission from the press abatement to be monitored without the use of the press abatement stack and should remedy the issue.

Action 4 – Advise NRW of the timescales for the implementation of the new emissions monitoring platform and ports for emission point A31. Please do so by 31/07/23.

It was noted in the SSP that the angle of swirl observed at Emission Point A30 (MDF 1) does not meet the EN15259 criteria across the sampling line, but during the most recent monitoring campaign the swirl angle did meet the criteria at locations A1 and A2. The high (and variable) angle of swirl appears unusual given the monitoring location positioned on a long straight section of duct and maybe related to process conditions disturbing the air flow.

Recommendation 2 – It is recommended that Kronospan reviews the cause of the high swirl angle at emission point A30 to determine if steps can be taken to improve compliance with sample plane validation criteria.

Due to the issues noted with the sampling provisions under assessment, the expanded percentage measurement uncertainties achieved at the 95% Confidence Interval have been reviewed against the maximum permissible values for periodic monitoring as set out in the [GOV Guidance Note](#).

Based on the evidence presented within the Q4 extractive monitoring reports, all measurement uncertainties fall below the maximum values with the exception of emission point A32. In this case the elevated uncertainty does not reflect any deficiency in the monitoring provisions, rather the high oxygen content in the exhaust gas.

Emission Point A29 (MDF 2 cyclones) – the four cyclones do not benefit from a permanent monitoring platform with temporary scaffold platforms having been erected. However, the platform depth is not sufficient to allow sampling of all the sample points required. Additionally, ATESTA report that insufficient sampling ports are installed.

Action 5 – Review MDF 2 monitoring platforms and before the next monitoring round adjust accordingly to prevent and where that is not possible, minimise monitoring deviations.

Action 6 – Advise NRW of your intentions to install an additional monitoring port on emission Point A29 cyclones.

Emission Point A26 (K7 Biomass Boiler) has not yet been subject to periodic monitoring. There appears to be a difference in interpretation of the permit requirements and this matter will be addressed outside of the scope of this OMA. It is noted that this emission point requires a homogeneity test.

Action 7 – Attach a copy of the homogeneity test with your next routine emissions monitoring return for this emission point.

N.B One round of quarterly monitoring must include all MDF 1 and all MDF 2 cyclones during their respective monitoring rounds.

Action 8 - Emission Point 30 (MDF 1 cyclones), ATESTA report that line B port cap could not be removed – this should be remedied before the next monitoring round if not already.

Action 9 - The Q4 monitoring reports include numerous absorption efficiency deviations that Kronospan have not reviewed with ATESTA. Please do so with a view to identify the root cause and opportunities to minimise deviations in future monitoring rounds. Ensure regular review of monitoring deviations.

OMA 3: Continuous monitoring		
OMA ELEMENTS	SCORE	COMMENTS
A. Provisions for monitoring and location of continuous monitors	3	Emission point A27 is served by a permanent platform but ducting runs across the platform in a way that restricts access to monitoring ports and positions leading to deviation from the standard methods. EN15259 flow criteria are met. CEMS are suitably located.
B. Certification of continuous monitoring	4	All Continuous Emissions Monitoring Systems (CEMS) are MCERTS certified. No procedure in place to ensure replacement instruments are MCERTS certified.
C. Do not assess for air, water only	N/A	N/A
D. Calibration methods	1	The CEMS are not calibrated to an acceptable standard in accordance with EN14181 - no QAL2. QAL3 is performed.
E. Frequency of maintenance and calibration	2	QAL2 and ASTs have not been performed as required by EN14181. Maintenance is completed under contract including management of test gases.
F. Reliability of equipment (data availability)	5	The operator reports that equipment is very reliable. Duty and hot standby CEMS in use. <10 invalid days reported via routine returns.
G. Breakdown response	5	24hr breakdown service contract in place. The operator has tandem systems – hot standby CEMS.
H. Traceability	5	QAL3 gas cylinder certificates inspected.
OMA 3 – SCORE	25/35	71%
SUMMARY COMMENTS FOR OMA 3		
This section of the report is relevant to emission point A27 (K8 Biomass Boiler) only.		

Continuous Emissions Monitoring Systems (CEMS)

Particulate Matter - Durag D-R 808, certificate number MC170324/01

Multi Gas - Dr Födisch, MCA 10 Multi Component Analyser, certificate number MC140256/06

TOC - SK-Elektronik GmbH Thermo-FID TOC Analyser, certificate number MCMC050062/05

Data Acquisition Handling System – Envirosoft (MCERTS).

EN14181

During the audit it was established that the CEMS have not been subject to QAL2 or AST contrary to the requirements of the permit and previous requirements of the WCBC permit.

The operator had identified this issue prior to the OMA and commissioned a QAL2 exercise for both sets of CEMS December 2022. Both CEMS passed and following this audit calibration functions have been entered into the Data Acquisition and Handling System.

The QAL2 reports will be reviewed by NRW and any comment will be supplied separately.

Refer actions in section 'OMA 1' above.

OMA 4: Quality assurance		
OMA ELEMENTS	SCORE	COMMENTS
A. External quality control schemes	5	All monitoring activities are MCERTS accredited.
B. Internal data QC	5	CEMS data calculated and reported via MCERTS certified software. 95% confidence intervals applied correctly.
C. Competence of monitoring personnel	5	Sampling and analysis personnel (MCERTS test laboratory) are certified and have the appropriate technical endorsements.
D. Auditing of monitoring	1	No auditing procedures or audit plans are available. No on-site audits have been carried out.
E. Audit compliance	1	As no audits have been performed no audit records are available.
F. Reporting	2	Emissions data for emission points A29 & A30 have not been corrected for oxygen content contrary to the permit. The Q4 monitoring return include some transposition errors (highlighted to the operator & subsequently amended).
OMA 4 – SCORE	19/30	63%
SUMMARY COMMENTS FOR OMA 4		
<p>Emissions from the process must be corrected to standard reference conditions as specified by the permit, the correction varies depending on the nature of the process.</p> <p>Standard reference conditions were reviewed in the Q4 ATESTA reports, and it was identified that emissions data collected for emission points A29 and A30 (MDF 1 and 2 cyclones) has not been corrected to 18% Oxygen. The permit states that directly heated particle board dryers should be corrected to 18% oxygen, dry, 101.3 kPa & 273K.</p> <p>Failure to correct data in accordance with the permit is a breach of permit condition 3.6.1 Given this error results in a reduction in emissions a non compliance score of 4 has been awarded. Refer actions in section 'OMA 1' above.</p> <p>Action 10 – Implement auditing procedures and plans for all monitoring activities (management and technical). Maintain audit records and take corrective action where necessary.</p> <p>Action 11 – Implement a quality control procedure for the review of emissions monitoring returns to ensure data is reported accurately to NRW.</p>		