

Compliance Assessment Report CAR_NRW0037307

Permit being assessed: BL3986ID.

For: Aberthaw Works EPR/BL3986ID, held by Tarmac Cement and Lime Limited

At: Aberthaw Works , East Aberthaw, Barry, Vale of Glamorgan, CF62 3ZR.

Type of assessment carried out: Report/Data Review, Reason: Routine.

On 08/01/2021.

Parts of permit assessed: Noise control, emissions and maintenance

NRW Lead Officer: Antony Leakey, accompanied by Mostyn Wall.

Report sent to: Georgina Taubman, Health, Safety & Environmental Business Partner on 08/01/2021.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
F2 - Amenity - Noise	C3 Minor (Suspended)	1.1.1
C2 - General Management - Management system and operating procedures	C3 Minor	1.1.1
E1 - Emissions - Air	C3 Minor	3.1.2
E1 - Emissions - Air	C3 Minor	3.2.1

Result types are explained in more detail in the 'Important Information' section below.

Total number of non-compliances recorded	Total non-compliance score
4	12

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

Criteria	Action needed	Complete by
F2	Tarmac to prioritise noise impact investigations and action plan considering comments made above. A revised action plan shall be submitted to NRW.	01/03/2021
C2	Tarmac to review coal mill bag filter inspection and maintenance regime, implement improvements.	30/06/2021
E1	Tarmac to review coal mill bag filter inspection and maintenance regime, implement improvements.	30/06/2021
E1	Tarmac to review instrument air reliability and burst bag detection provision on filter plant across site to ensure that potential for offsite impacts are minimised.	30/06/2021

Action criteria codes are listed in the 'Important information' section below.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

You are non-compliant with your permit.

At this time, we are issuing you with a warning for the non-compliance recorded above. Warnings may influence future enforcement response for continued or further non-compliance.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

Aberthaw Cement Works

Emissions and reporting review and site incident update – 8 January 2021

Noise assessment

Offsite noise assessments were undertaken between 10 and 15 September.

The weather conditions were calm, and the cement works was audible quite clearly in the area between Boy's Village and the power station access road.

The indicative (uncalibrated meter) sound levels were not particularly high, but the broadband sound from the cement works was the dominant sound:

Field gate near Boy's Village entrance – $LA_{eq(5-min)}$ – 42-48 dB(A)

Power station access road opposite RWE entrance sign – $LA_{eq(5-min)}$ – 45-47 dB(A)

Sound from the cement works does propagate noticeably to the edge of West Aberthaw, its dominance aided by the otherwise very low background levels – the main road is screened by the railway embankment and vehicle movements on the power station access road were minimal. There was some slight variability in the works noise, this might have been due to changes in wind speed/direction, although it was generally very calm and still.

Levels may also be worse at elevated parts of the nearest residence if there is some screening by the railway embankment at ground level.

Background levels seem relatively low when the cement works is not audible – indicative levels are 37-43 dB(A) and it could be lower than this at night when traffic movements are lower. Therefore, impact from the works is possible at these locations.

New Environmental Operating Procedure EOP4: Noise and Vibration was reviewed. The 6 noise monitoring locations provide line of sight to the works, but there may be some duplication (e.g. locations 2 and 3 – at East Aberthaw, rather than Font-y-gary). Location 6

is unlikely to be representative of the West Aberthaw location where complaints are currently received and similarly for location 4 with respect to quarry complaints received from Fonmon Park Road.

The procedure does not specify the measures, even in outline, to be used to prevent or minimise noise impact. For example, minimisation of drop heights when loading stone at the quarry, ensuring that all doors and louvres are kept closed on noisy plant buildings, maintaining plant in good condition.

A three yearly noise survey is required by the procedure, but specification of the survey is not provided, e.g. low frequency noise assessment, frequency analysis, BS4142 survey. Routine noise surveys may not be necessary if key noise source controls can be identified and then checked for continuing performance periodically.

ACTION: Tarmac to review EOP4 considering the comments made above and with reference to the latest H3 guidance and provide an update at next compliance meeting.

The draft Noise Management Plan, Issue 1 dated November 2020, was also reviewed. This document is not a noise management plan in the normal meaning of the term as it identifies infrastructure improvements needed to attenuate noise sources on site. An operational noise management plan should identify the measures outlined as absent from EOP4 above and measures to maintain the infrastructure noise controls once implemented.

From the plan it is evident that basic measures, such as exhaust diffusers fitted to air cannon vents, ensuring that loose bolting is not present and replacement of missing walls on noisy plant buildings, are not being taken. Operating in such a manner is not BAT and steps must be taken to rectify these issues without delay. However, specific events and associated noise levels were not witnessed by an NRW officer and therefore this not a non-compliance with permit condition 3.4.1. Failure to use BAT to prevent or minimise noise impacts generally is a minor category 3 non-compliance with permit condition 1.1.1. This is on the basis that significant persistent impacts associated with these failures have not been identified to date. The score is suspended pending completion of improvement works to reduce impacts but will be subject to review within 6 months.

It is noted that several infrastructure improvements are to be implemented to reduce noise impacts and these are welcomed. Tarmac should note that using single sheet corrugated steel to replace compressor house walls will provide minimal attenuation even at 1 mm thickness. A minimum surface mass of 7 kg/m² is needed to achieve measurable attenuation and 20 kg/m² is recommended if possible. NRW suggests that the necessary noise level reductions to achieve sufficient offsite impact improvement are quantified and solutions design to achieve these reductions otherwise measures taken may not be sufficient and might need to be revisited.

Another aspect to investigate is whether the reported persistent noise at West Aberthaw may be a low frequency (10-160 Hz) noise intrusion problem.

The nature of the reported works “background” rumbling being throughout the property, even with double glazed windows closed is indicative of this sort of issue.

Details on the LFN assessment procedure “NANR-45” can be found at:

http://usir.salford.ac.uk/493/1/NANR45-procedure_rev1_23_12_2011.pdf

NRW notes that the noise consultant has identified several high output sources and higher frequency tonal noises, but also refers to LFN tones at levels that will propagate into houses. However, no details of these measurements are provided, nor are remedies or implementation timescales proposed. Specific measurement of frequency spectra and sound levels at the plant items most likely to generate LFN will enable calculation of potential for impact.

In summary, NRW is of the view that a structured approach to assessment and rectification of noise sources at the works is not being taken. In particular, ranking of the noise source contribution to offsite impacts and quantification of the required noise reduction should be undertaken so that priorities can be set, and urgent action taken.

ACTION: Tarmac to prioritise noise impact investigations and action plan considering comments made above. A revised action plan shall be submitted to NRW by 1 March 2021.

Recent incidents summary and non-compliance scoring

17/8/20 – kiln stack daily mean dust ELV exceeded – insufficient 30-minute mean data to generate a valid daily mean due to only 3 hours of operation. MPA “rollback” rules used to calculate revised value for compliance assessment purposes and the emissions data were checked to verify that the correct approach has been applied. There are also considerations arising from implementation of EN 17255-1 which requires at least 6 hours of valid short-term average data (30-minute averages) to generate a valid daily average. EN 17255-1 also requires that daily averages start at 00:00:00 hours, whereas Tarmac appears to use 12:00:00 hours. Tarmac should review the implications of the new Data Acquisition and Handling Systems (DAHS) standard BS EN 17255-1:2019 and implementation requirements at Aberthaw.

ACTION: Tarmac to review DAHS Standard requirements and provide an update on progress at next compliance meeting.

3/9/20 – coal mill dirty bag filter, ELV exceeded – bags replaced but the inspection and maintenance regime frequency does not appear to detect deterioration between emissions testing intervals and needs revision. The ELV exceedance is a minor non-compliance with permit condition 3.1.2. due to the minimal air quality impact expected from this scale of release. Failure to implement an adequate maintenance regime to prevent or minimise dust releases is a minor category 3 non-compliance with permit condition 1.1.1.

ACTION: Tarmac to review coal mill bag filter inspection and maintenance regime, implement improvements and provide an update at next compliance meeting.

27/9/20 – cooler tube elbow failure. Rapid deterioration occurred shortly before scheduled replacement. A review of replacement intervals has been undertaken. Off site dust deposition rates appear to be low for this period and no complaints were received, the kiln hood presumably mitigated the fugitive dust release caused by the failure. No further action required.

29/9/20 – 250 litre diesel spill following HGV fuel tank rupture caused by collision with crash barrier. No impact reported and full clean up completed. Site access layout to be reviewed. A previous incident investigation following a similar in November 2019 concluded that site access was not a contributory factor. The two incidents involved different access/egress routes and one event involved a left-hand drive vehicle. No further action required.

9/10/20 – coal mill bag plant seized damper allowing bypass of bag filters and visible release of coal dust via stack. Apparent cause was loss of instrument air pressure. A review of reliability of the site instrument air system and driers should be undertaken to ensure that other plant issues do not occur due to insufficient air supply. Limit switches have been fitted to the damper to alarm in the control room if a similar failure occurs. Burst bag detection may also provide protection against similar failures. Visible emissions from the stack could be as high as 50-100 mg/m³ but even at this level it is unlikely that the PM₁₀ air quality standard will have been exceeded. Dust deposition rates were also low during this period. Consequently, the lack of burst bag detection is a minor impact category 3 non-compliance with permit condition 3.2.1.

ACTION: Tarmac to review instrument air reliability and burst bag detection provision on filter plant across site to ensure that potential for offsite impacts are minimised and provide an update at next compliance meeting.

It was noted that the coal mill uses kiln flue gas to dry the coal, which is then vented via the bag filter to atmosphere via a relatively low 50 metre stack. The only emissions control is for dust, but there will be components of kiln flue gas such as acid gases and VOC present. Corrosion of the stack and duct work was reported, and this is not surprising given the gas composition, likely high level of moisture content and relatively low temperature. Tarmac should review these emissions to ensure that impacts are acceptable and consider alternatives to venting to atmosphere where viable, such as return to the kiln system.

ACTION: Tarmac to review coal mill emissions and ensure that potential for offsite impacts are minimised and provide an update at next compliance meeting.

17-24/10/20 - dust deposition at West Aberthaw was reported during this period, although the kiln was shut down on 19/10/20 until 28/10/20. Deposition measurements were elevated (power station data downwind of cement works). However, emissions data for the main stack for the operational period were within the dust ELV and no other issues were reported, although main bag filters were replaced during the shutdown suggesting that some performance deterioration had occurred. Heavy rainfall may have contributed to an increase in washout of ambient dust. No further action required.

27/11/20 – dense visible main plume reported. Emissions data shows normal dust levels and weather conditions suggest that a visible condensation plume was likely. No further action required.

Kiln trips

A lightning strike close to the site on 10 August caused the kiln Variable Speed Drive to detect an earth fault and the cement mill high voltage motor to detect an undervoltage fault. Site wide voltage dips occur during lightning storms when national grid switchgear trips and even with superfast auto re-close equipment the short dip on site can trip the kiln, cement

mill and quarry systems.

On 27 August a ceramic high voltage insulation bushing failure on an HV oil circuit breaker resulted in a short circuit to earth. Some of the site power supply systems are aged, dating from the 1970s. Capital expenditure to update the infrastructure is planned.

Previously trips due to control system electronics card failures have occurred. A phased upgrading programme is around 60-70% completed.

Uncontrolled kiln stoppages and subsequent restarts are associated with fugitive dust releases. The kiln extraction hood will have reduced such emissions significantly but avoiding unplanned stoppages will minimise dust emissions.

Emissions review

The works has operated with a scheduled shutdown in October to replace a cooler tube and main dust plant filter bags.

Monitoring data for Q2 and Q3 2020 has been reviewed and no breach of permit conditions was identified other than those already addressed in previous sections of this report.

All emissions and reporting are compliant with the permit requirements.

END

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

What are suspended scores?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry and Waste action criteria (used in section 1 and 2):

A: Permitted activities

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or 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
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within 20 working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 – 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.