



Appeals Convenor
Environmental Protection Act 1986

**REPORT TO THE
MINISTER FOR ENVIRONMENT**

**APPEAL IN OBJECTION TO THE CONDITIONS APPLIED TO A WORKS
APPROVAL**

**W6167/2018/1 – COCKBURN CEMENT LTD
RUSSELL ROAD EAST, MUNSTER**

APPLICANT: COCKBURN CEMENT LTD

Appeal Number 7 of 2019

April 2019

Appeal Summary

This is an appeal against the conditions applied to a works approval issued for a cement and lime manufacturing plant in Munster, south of Perth.

The works approval authorises the plant operator to install and operate (for two limited duration trials) equipment that injects an odour neutralising product into the plant stacks. The purpose of the trials is to ascertain whether the product is efficacious in reducing odour from the premises.

The appellant had a number of objections to the conditions of the works approval, including that there was insufficient oversight and that the use of the neutralising product should be more closely constrained.

On the information available through the appeal, including the limited scope and duration of the trial of the use of the odour neutralising product, it is considered the conditions applied to the works approval by DWER were adequate. As a result, no changes are recommended be made to the works approval.

In coming to this view, it was noted that the plant operator is not permitted to use the odour neutralising product otherwise than as permitted under the works approval, and as a result, any proposal to conduct additional trials is understood to require additional consideration and approval by the regulator.

Recommendation

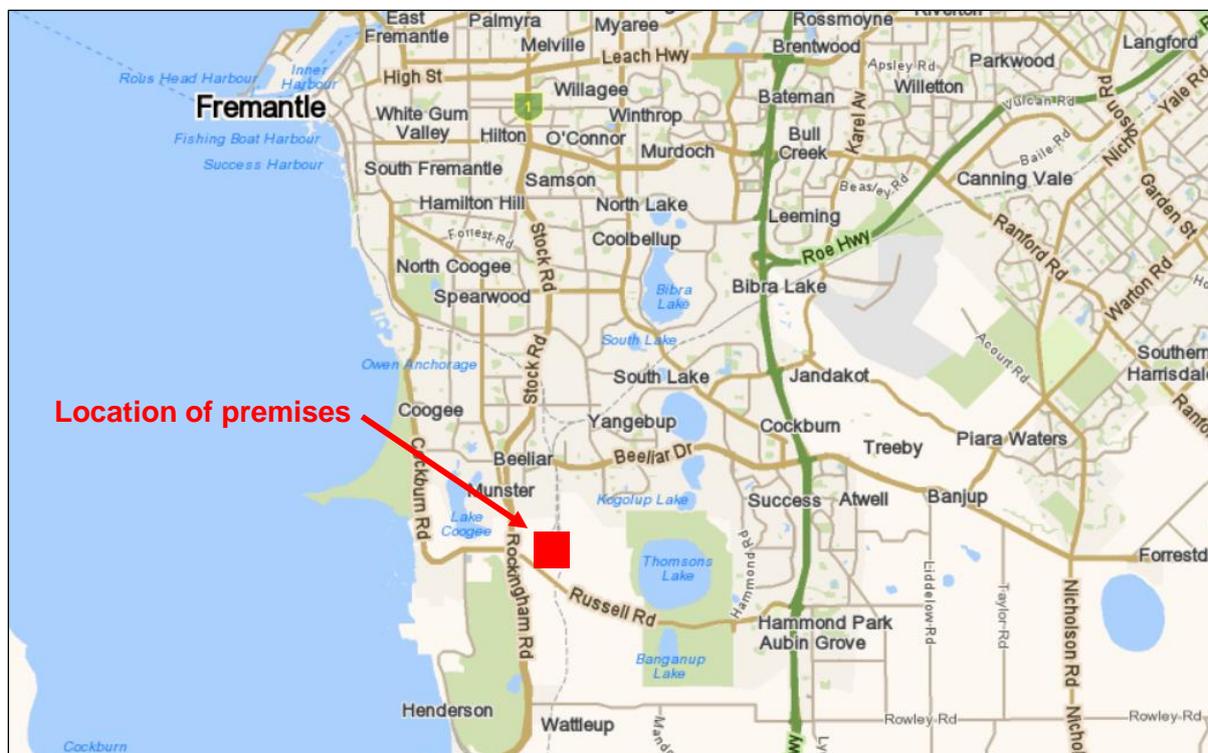
It is recommended that the appeal be dismissed.

BACKGROUND

Cockburn Cement Ltd (Cockburn) operates a lime and cement manufacturing plant at Russell Road East in Munster, approximately 25 kilometres south of Perth (see Figure 1).

Figure 1 – Location of premises

(Source: *whereis.com* 2019)



Odour from the premises has been the source of concern in the community surrounding the premises for a number of years, having been the subject of previous appeal decisions and a Parliamentary Inquiry in 2010-11.¹

In December 2018, the Minister for Environment determined appeals received against the amendment of the licence issued to Cockburn, and among other things, held that odour from Cockburn's plant was impacting on the amenity of people outside the premises, and particularly to residential areas in an arc north west to north east of the plant.²

In August 2018, Cockburn lodged an application for a works approval with the Department of Water and Environmental Regulation (DWER) to alter the premises to permit the trial use of an odour neutralising product called 'Aireactor OWD'. In the application, Cockburn stated that the purpose of the trial is to test the efficacy of the product at reducing odour and, therefore, attempt to address the amenity impacts that had previously been identified.

On 25 January 2019 date, DWER issued a works approval to Cockburn authorising the proposed works and limited trial. The key elements of the works approval are:

1. Installation of injection equipment

¹ Legislative Council Standing Committee on Environment and Public Affairs, Parliament of Western Australia, *Inquiry into Cockburn Cement Limited, Munster (Report 24)*, October 2011

² Minister's appeal decision, appeals 001-002/17, 5 December 2018.

2. Two phase trial to test efficacy of the product
3. Final report to DWER on outcomes of trials with 42 days of the end of each trial.

Pursuant to section 102(3) of the *Environmental Protection Act 1986* (EP Act), any person who is aggrieved by the specification of the conditions of a works approval may within 21 days of the applicant being notified of those conditions lodge an appeal in writing with the Minister for Environment setting out the grounds of that appeal. On 4 February 2019, Mr G Hocking filed an appeal within the meaning of section 102(3) of the EP Act.

GROUND OF APPEAL

Mr Hocking's appeal raised the following concerns in relation to the works approval conditions:

1. Failure to require the trials to be conducted when coal is the exclusive fuel source
2. Failure to require a DWER or other independent inspector to be present while trials are being undertaken to confirm process conditions etc (i.e. Cockburn should not be allowed to self-monitor)
3. Failure to explicitly prohibit Cockburn using the product otherwise than for the defined trial periods
4. Failure to require Cockburn to notify the community of when the trials are being conducted; and conducting trials on weekdays rather than weekends when community members are present
5. Inappropriate use of testing methodology for odour, being Method A under AS/NZS4323:3:2001; and for PAH being SW-846 Method 0010
6. Uncertainty about the definition of unreasonable emissions from the premises

These issues will be considered in turn.

GROUND 1 – MANDATING USE OF COAL

By this ground of appeal the appellant submitted that the conditions of the works approval should be amended to require the trial to be conducted while the plant is operating on coal (rather than gas):

If such a condition had been imposed, both DWER and the Community could assess whether or not the [trial] does in fact reduce or eliminate sulphur-like odours created by the [use of coal]. An additional Condition should be added to the Works Approval requiring CCL to use coal exclusively during the time the ONS trials are conducted. Unless that additional condition is imposed CCL can use the far less polluting fuel, natural gas, during the ONS trials and thereby the effectiveness of the ONS will not be accurately assessed.

Consideration

In response to this issue, DWER advised that:

... the Works Approval specifies that Continuous Emission Monitoring System (CEMS) data recording fuel type and ratio is to be provided ... [and this] information will be reviewed by the Department and subjected to appropriate rigour of analysis and interpretation.

The current trial is limited to phases one and two concentrating on the delivery of the product into the stack environment and analysing the product's performance in that environment during normal operating conditions. Normal operating conditions are not restricted to coal as the sole fuel source. The Department considers conducting the trial under normal operating conditions appropriate, particularly as information of fuel type used is also being recorded.

As the objective of the current trial is not to describe and measure odour impacts on the community, the Appellant's concern of misinterpreting results with regard to odour impacts on the community due to variable fuel sources can be allayed. The Department also notes that the use of the odour neutralising product is aimed at minimising odour emissions only and not any other emission parameters.³

Cockburn responded to this ground of appeal by confirming it is undertaking investigations into the source and causes of odour from the premises as part of the Minister's December 2018 appeal decision. As part of this process, Cockburn noted that fuel mixes will be considered, including the effects of burning different ratios of coal and gas. These investigations are being conducted separately to the odour neutralising trial the subject of this appeal.⁴

The appellant was provided the opportunity to respond to DWER's advice. In his response, the appellant reiterated concerns over the potential for the trials to be conducted in a way that fuel type is adjusted to lead to a false assessment of the effect of the neutralising product. The appellant maintained his view that the conditions should be amended to require the use of coal only.

Based on the short duration of the trial, and noting DWER's advice that all relevant process parameters (including fuel type) will be recorded as part of the trials, the addition of a condition requiring the trials to only be run on coal is not considered necessary.

It is noted also that, as an outcome of previous appeals on the amendment to the operating licence, the Minister found that there was uncertainty as to the source and causes of odour from the facility. To address this, the Minister endorsed Cockburn's commitment to undertake further detailed investigations into the source and causes of odour, which includes assessment of the effect of different fuel types. It is considered that these investigations (which include monitoring in the community) will provide improved information as to the source and cause of odour from the premises.

GROUND 2 – OVERSIGHT OF TRIALS

By this ground of appeal, the appellant submitted that a representative of DWER should be present during the trial to ensure that it is conducted according to identified specifications:

In the absence of independent supervision the person or persons controlling fuel inputs and kiln conditions are able to adjust fuel and raw material inputs and kiln temperatures so as to increase or decrease the quantity of odoriferous compounds created in the kilns and entering the kiln stacks ... to make the [trial] seem more effective than it is in reality.

Consideration

In response to this ground of appeal, DWER advised that the monitoring and reporting requirements of the works approval will identify whether any odour reductions are attributable to process variables or the application of the odour neutralising agent:

³ DWER, Advice to the Minister under s106, Appeal 007-19, 15 March 2019, page 3.

⁴ Cockburn Cement, Response to appeal 007-19, 29 March 2019, para 4.4.

For example, Condition 6 requires the provision of the last three years of stack testing results for comparison. Such a comparison will allow the Department to identify and query irregularities and modifications that, by themselves, would result in odour reductions. ... [O]perational data, such as fuel type and ratio, CEMS data and production rate data will also inform the interpretation of the trial results thus providing a comprehensive information context for the interpretation and analysis of trial data. Apart from reviewing the monitoring results, the Department will critically assess the methodology employed to obtain the trial results. The Department therefore considers that appropriate conditions are in place to allow evaluation of the trial results.⁵

Cockburn advised that it is required to submit reports to the Department which detail the results from monitoring and a comparison to emissions of the previous three years' stack testing results. In Cockburn's view, this requirement is appropriate to allow for phases one and two of the trial to be properly evaluated.⁶

In response to DWER's appeal advice, the appellant reiterated his view that DWER should maintain oversight of the trial to ensure the results are accurate.

On the information available, it is considered that the conditions applied to the trials provide sufficient content for DWER to meaningfully consider the results. This includes sufficient information in respect to process parameters at the time the trials are conducted.

In addition, the concern raised by the appellant that Cockburn may influence the results is not supported: Cockburn is required to monitor and record fuel types used in the kilns, and DWER will consider this information in assessing the efficacy of the trials and whether or not phase three of the trial should be approved.

For the above reasons, it is not considered necessary for DWER officers to be present during the trials as requested by the appellant.

GROUND 3 – PROHIBITION ON ODOUR NEUTRALISER OTHER THAN FOR TRIALS

By this ground of appeal, the appellant suggested that Cockburn may have used the odour neutralising product before the commencement of the trial, as reported by some residents:

If local residents are periodically exposed to a different but not unpleasant odour in the air some weeks or some months before the ONS trials begin they are likely to become accustomed to the odour and believe it is part of the 'natural' local environment and not associate it with the ONS trials when they are conducted. Residents are therefore less likely to lodge complaints about 'odours' from the Premises if they are lulled into a belief that an odour they perceive is 'just a part of nature'.

To address this concern, the appellant submitted that the conditions of the works approval should be amended to prohibit the use of the odour neutralising product otherwise than as part of the two trial periods.

Consideration

In response to this ground of the appeal, DWER advised:

The Works Approval Holder is not authorised to use the odour neutralising agent outside of the Works Approval duration timeframe and must meet the approved trial period

⁵ DWER, Advice to the Minister under s106, Appeal 007-19, 15 March 2019, page 4.

⁶ Cockburn Cement, Response to appeal 007-19, 29 March 2019, para 5.3.

specifications (Condition 4, Table 3). The Department does not agree with the Appellant that further conditioning is required for the limited trial scope authorised.⁷

In additional information submitted in response to DWER's advice, the appellant expressed its understanding that the works approval effectively permits Cockburn to use the neutralising product through the duration of the instrument, that is, from January to July 2019. The appellant reiterated the view that this had the potential to 'de-sensitise' residents to the smell of the neutralising product, thereby skewing the results of future complaints.

As DWER has advised, condition 4 of the works approval permits the operation of the injection system for two discrete trial periods of no more than 48 hours and 24 hours respectively.

In addition, condition 7 of the works approval prohibits any emissions from the approved works, except those specifically authorised in Table 8 of the conditions. This relevantly includes emissions from the use of the neutralising product during the two trial periods, but not otherwise.

The appellant's reference to the works approval duration being the period within which the works and trial are authorised is acknowledged, however, the duration of the instrument is a different consideration to the specific restrictions applying to the use of the neutralising product.

Based on DWER's clear advice that Cockburn is not permitted to use the odour neutralising product other than in accordance with the works approval, and noting enforcement of compliance with works approvals is a matter for the department, no change to the conditions is considered necessary in this case. Should the appellant be concerned about possible non-compliance with the instrument, these are matters that should be brought to the attention of DWER for its action.

GROUND 4 – NOTIFICATION OF CONDUCT OF TRIALS; TIMING OF TRIALS

By this ground of appeal, the appellant requested that the works approval be amended to require Cockburn to give advance notice of the dates of the proposed trials:

Unless the Community has advance notice when the [trial] is used the Community may well become confused by different odours at different times and be uncertain as to whether or not an odour comes from the [trials] or from other sources ... If the Community has advance notice as to the dates and times when the ... trials are to be conducted they can provide feedback to DWER as to the times and wind directions at the places they smelt an offensive or other odour near the Premises.

Unless the Community has such information it will remain unconvinced that the ONS has been effective in reducing or eliminating kiln odours from the Premises.

The appellant also questioned the reason for limiting the conduct of the trials to weekdays, when many residents were not at home:

[B]y excluding weekends ... the Community will interpret this exemption as an attempt to suppress the number of pollution complaints currently being logged with the Pollutionwatch section of DWER. Pollutionwatch does not log complaints in real time on weekends (except for emergencies) so this exemption will apply to the days when the majority of the Community are at home and experience odours from the Premises while engaging in outdoor recreational and social activities. This exemption appears to have

⁷ DWER, Advice to the Minister under s106, Appeal 007-19, 15 March 2019, page 3.

been included for the benefit of DWER so it is not required to incur the costs of supplying personnel to monitor Trials on the weekend. Condition 4 has the effect of reducing the capacity of the Community to be aware of, and be involved in, the assessment of the [trial].

Consideration

In response to these issues, DWER advised:

The two authorised phases of the trial involve installation and commissioning of the equipment and infrastructure, and determination and testing of optimum injection rates with monitoring at the stack.

The Department did not authorise phase three of the trial proposed in the Works Approval holder's application, which included the extended continuous use of the odour neutralising agent over a three months timeframe. The objective of the current limited trial, consisting of phase one and two only, is not to describe and measure odour impacts on the community, but to determine an optimum dilution ratio through measuring changes in the stacks' air emission profile. The trial design and duration as conditioned in the Works Approval reflect this purpose. Equally, monitoring requirements are therefore focussed at the stack (Condition 5, Table 4) and not at ambient monitoring locations.⁸

In response to DWER's advice, the appellant acknowledged that given the two trials do not contemplate field odour testing, it removed its objection to the trials being conducted on weekdays. The appellant otherwise maintained the view that DWER should be present during the trials to verify results.

DWER's response summarises the purpose of the short-duration trials to be to assess changes to stack emission parameters, and not ambient odour received in the community. It is understood in this regard that Cockburn intended to implement 'phase 3' of the trials, which would be for a longer duration, and involve ambient odour assessments. Given DWER did not approve this element of the proposed trials, it is considered that the conditions are appropriately directed to assessing the effect of the first two (limited) trials.

GROUND 5 – TESTING METHODOLOGIES (ODOUR AND PAH)

The appellant submitted that the methodologies applied to the works approval in respect to odour and polyaromatic hydrocarbons (PAH) were deficient.

In relation to odour, the appellant questioned the application of the standard referenced in the conditions (AS/NZS 4323.3.2001), suggesting it not suited to the proposed trials. The appellant submitted that the methodology for testing odour should include gas chromatography:

A portable gas chromatograph can be employed to detect the particular substances in the air being sampled by the human 'sensor' to provide a more objective basis to the detection of odours. In other words, the instrument can provide evidence which supplements and supports that of the human 'sensor' and also to minimise inevitable human error. The data from the gas chromatograph can also be used to check the presence and concentration of toxic gases known to be emitted from the Premises such as sulphur dioxide, nitrogen dioxide, carbon monoxide, carbon dioxide, volatile organic compounds, hydrogen chloride, polycyclic aromatic hydrocarbons and others.

This chromatography-olfactometry (GC-O) technique couples traditional gas chromatographic analysis with sensory detection in order to study complex mixtures of odorous substances and to identify odour active compounds.

⁸ DWER, Advice to the Minister under s106, Appeal 007-19, 15 March 2019, pages 2-3.

In relation to PAH, the appellant submitted that the standard specified in the works approval is not designed for that purpose, and recommended instead a different standard (Method TO-13A).

Consideration

In response to this issue, DWER advised:

The gas chromatography-olfactometry (GC-O) technique ... is currently a laboratory technique, not widely developed (no laboratory in Perth) and is not used for regulatory assessment. Owing to the uncertainty related to the lack of sensitivity of odour measurement, the chemical instability of the collected sample and the narrow polarity and boiling point range of chemicals able to pass through a gas chromatograph, very few conclusions could be made regarding the specific chemicals relating to the source of the odour. For these reasons, the Department considers the mandated method (AS/NZS 4323.3:2001) used on its own is appropriate and the addition of gas chromatography as not useful nor practical in the current context.⁹

The appellant, in reply to DWER, submitted that while he could not dispute the advice about the availability of a suitable laboratory in Perth, DWER should consider the use of a portable gas chromatography-mass spectrometer (GC-MS) unit, which the appellant claimed are sensitive enough to measure very dilute concentrations of gases. The appellant stated this could be used to 'finger-print' odours and determine their origin.

In relation to PAH, DWER advised:

The conditioned method for sampling and analysis of PAHs (SW-846 Method 0010) is well-established and widely used in the regulatory context (e.g. EPA Victoria: A guide to sampling and analysis of air emissions. 2002). The method is applied to source emission testing.

The method proposed by the Appellant ... is unsuitable because it is designed for ambient air monitoring, not for stack emission monitoring. The scope of the authorised trial is limited, concentrating on the stack environment only. It does not include ambient air monitoring.

In additional correspondence from the appellant, he acknowledged DWER's position in response to PAH stack monitoring.

Based on the above, it appears that the methodology adopted by DWER for both odour and PAH assessments is appropriate, having regard to the limited scope of the trials. The methodologies identified by the appellant are, on the basis of DWER's advice, not considered to be applicable in this instance.

In addition, and as noted previously, the amendments made to the licence by the Minister last December requires Cockburn to carry out comprehensive odour investigations in the first half of 2019. It is expected that these investigations will provide important new information on the source and causes of any odour emissions from the stacks at the premises.

GROUND 6 – DEFINITION OF UNREASONABLE EMISSIONS

By this ground of the appeal, the appellant submitted that there may be an inconsistency between condition 18C of the amended licence and the reference to 'unreasonable emissions' in the works approval. The appellant requested that the following definition of 'unreasonable emissions' be included in the works approval:

⁹ DWER, Advice to the Minister under s106, Appeal 007-19, 15 March 2019, page 4.

Unreasonable Emissions shall include odours emitted from the Premises contrary to condition 18C of its licence under the EP Act

Consideration

In response to this issue, DWER advised that 'unreasonable emissions' are defined in the works approval as having:

... "the same meaning given to that term under the EP Act".

As the Works Approval ... has been granted under the provisions of the EP Act, a word or term being referred to within the instrument should appropriately refer back to the EP Act where a definition is not provided within the document.

In this instance, the effect would be that the definition of "unreasonable emission" would be the same under both instruments.¹⁰

The appellant accepted DWER's advice in response to this ground of appeal.

Noting the definition of 'unreasonable emissions' in the EP Act is analogous to the definition in the licence, DWER's position is supported, and no inconsistency between the works approval and licence is made out.

CONCLUSION AND RECOMMENDATION

Having regard to the information provided in respect to this appeal, including the limited scope and duration of the trial of the use of the odour neutralising product, it is considered the conditions applied to the works approval by DWER were adequate. As a result, no changes are recommended be made to the works approval.

It follows that it is recommended the appeal be dismissed.

On the advice of DWER, Cockburn is not permitted to use the odour neutralising product otherwise than as permitted under the works approval, and as a result, any proposal to conduct additional trials (for example, phase 3) is understood to require additional consideration and approval by DWER.

Emma Gaunt
APPEALS CONVENOR

Investigating Officer:
Jean-Pierre Clement, Deputy Appeals Convenor

¹⁰ DWER, Advice to the Minister under s106, Appeal 007-19, 15 March 2019, pages 5-6.