



23<sup>rd</sup> November 2022  
Our ref: 445109-01(00)

18 Frogmore Road  
Hemel Hempstead  
Hertfordshire  
HP3 9RT  
UK

Mr. Martin Aymes  
Llandyssil Community Council  
By email to: martinaymes@googlemail.com

Telephone: +44 (0)1442 437500  
Fax: +44 (0)1442 437552  
[www.rsk.co.uk](http://www.rsk.co.uk)

Dear Mr. Aymes,

## **NORTH POWYS BULKING FACILITY: REVIEW OF SUBMITTED ODOUR IMPACT ASSESSMENT**

Thank you for your instruction to review the odour assessment submitted in support of the application to Natural Resources Wales (NRW) for a permit under the Environmental Permitting Regulations for the North Powys recycling materials bulking plant at Abermule Business Park, Abermule, Powys, SY15 6NU.

### **1. BACKGROUND**

We understand planning consent has been granted and Powys County Council is currently seeking a permit to operate the facility. We understand that a previous application was refused, and that NRW is consulting on the current application until 23<sup>rd</sup> November 2022.

The current application is supported by an Odour Impact Assessment ('Project Code' 416.00798.00038, dated June 2022) prepared by SLR Consulting Limited (SLR) based on dispersion modelling informed by sampling odour emissions from similar plant.

It is assumed that NRW will review any assessment submitted to them in support of a permit application to satisfy themselves that it is appropriate, however Llandyssil Community Council requested RSK Environment Limited to carry out an independent review of the odour assessment, and our comments are set out in this letter.

A detailed audit of the model inputs and files is beyond the scope of this review, however the following remarks are based on a review of the odour assessment and our experience in the sampling and assessment of odour as part of commercial consultancy work.

### **2. REVIEW AND COMMENTS**

The odour impact assessment is based on detailed dispersion modelling using AERMOD, which is a validated, widely accepted dispersion modelling package commonly used in the UK for odour assessment and is considered appropriate.

SLR is an established, reputable consultancy however no information is provided on the authors of the assessment or their competence, or of any formal quality control review and authorisation.



**RSK Environment Ltd**  
Registered office  
65 Sussex Street  
Glasgow • G41 1DX • UK  
Registered in Scotland No. 115530  
[www.rsk.co.uk](http://www.rsk.co.uk)



The modelling methodology and assumptions appear appropriate and typical, however little detail is provided, and it would be difficult to replicate the model based on this report.

The modelling is based on 5 years (2015 to 2019) of Numerical Weather Prediction (NWP) 'meteorological data' because no weather stations were considered representative of the site. This is an accepted approach, although the source of the NWP does not appear to be given.

The selection of receptors and their sensitivities appears reasonable, though no details of the occupants of the proposed Abermule Business Park are available and some commercial uses such as food retail may be considered 'high' in sensitivity.

The odour was considered 'most offensive' and a criterion of  $C_{98,1-hr}$  1.5 ouE/m<sup>3</sup> applied at 'high sensitivity' (residential) receptors and  $C_{98,1-hr}$  3 ouE/m<sup>3</sup> at 'medium' sensitivity (commercial premises) receptors. This is considered appropriate and consistent with NRW's H4 guidance.

The assessment states that all waste materials storage and handling, with the exception of green waste and glass, will be inside the Bulking Shed, from which air will be extracted by five ventilation fans discharging horizontally through the north-eastern wall, and replaced by louvres in the south-west wall. No further details of this ventilation such as operational hours, air velocity or changes per hour are given, however vertical discharge from a tall stack at an appropriate velocity would be likely to provide better dispersion and therefore lower impacts, and would generally be considered BAT. The location of these discharge points in the north east wall would be likely to result in odorous air being directed towards the commercial receptors at the proposed Abermule industrial estate.

Based on the outcome of a 'sensitivity analysis' odour sources were modelled as un-enclosed area/volume emission sources (i.e. without consideration of the containment provided by the Bulking Shed structure) which is reported to represent the 'worst-case' assessment approach in terms of predicted off-site odour concentrations, compared with odorous air assumed to discharge from the five extract fans as point sources.

The absence of any information of the fans or air extract rates provides no evidence to support the suggestion that building will be maintained under 'negative pressure', and in reality, emissions are likely to be more complicated including fugitive emissions from the roller shutter doors during vehicle access and through gaps in the building envelope.

The extract fans as point sources were assumed to have a very low velocity in accordance with AERMOD guidance, however in reality, the discharge will be at a considerably greater horizontal velocity, therefore it may be possible that this approach may not well represent of odour levels at nearby receptors, such as those at the proposed Abermule Industrial Park, which are only 28m from these sources.

The emissions rates were estimated based on odour sampling carried out at other facilities, however little detail is provided on this and there may be a number of concerns about the odour emission rates measurements and calculations.

The absence of a more detailed account of how emissions rates have been measured and calculated undermines the veracity of the report.

No information is provided on the Consultants or laboratory which carried out the odour emission rate measurements, though it is stated that the laboratory was UKAS accredited. This is important for a number of

reasons, and specifically because of the challenges and practicalities of measuring odour using a Lindvall hood on potentially uneven solid emitting surfaces.

The odour emissions were measured in April rather than in the warmer summer months, which may mean that emissions from the wastes containing organic materials (food waste, residual wastes and AHP) are underestimated because decomposition rates and consequent emissions may be greater at warmer ambient temperatures.

The estimation and prediction of future odour emission rates from the small areas of wastes in storage bays does not appear to take account of emissions from soiled surfaces. In reality, bay walls and floor surfaces will become contaminated and emit odours.

The emissions rates used in the modelling appear low. In our experience, odour concentrations in waste handling building headspace, and extracted air from municipal waste facilities (without grinding/milling, screening and separation facilities) elsewhere are typically up to around 2,000 ou<sub>E</sub>/m<sup>3</sup>. As a benchmark, if a nominal extraction rate of 6.0 m<sup>3</sup>/s, were assumed, then the odour emission rate would be 12,000 ou<sub>E</sub>/s, considerably greater than the 693 ou<sub>E</sub>/s estimated for the North Powys Bulking Plant, and potentially suggesting that the odour emission rates used may be highly optimistic, which would significantly underpredict odour impacts.

The specific odour emission rate used for soiled rags and textiles based on measurements by UKWIR is an order of magnitude greater than those for the other wastes with putrescible components, food waste, residual waste and absorbent hygiene products waste, and this may also suggest the odour emissions rates sampled from these materials are very low estimates.

### 3. CONCLUSIONS

Overall, although no information is provided on the authors or any quality control review, the assessment appears to have been undertaken using appropriate techniques in line with relevant guidance. However there are a number of significant concerns which in our opinion may result in the assessment significantly underestimating impacts, specifically:

- The discharge of extracted air at low level towards receptors seems inconsistent with BAT;
- Little detail is provided on the building extraction/ventilation and its ability to control fugitive emissions;
- The approach used to model the odorous air discharges may underestimate odour concentrations at nearby receptors, particularly the Abermule Business Park;
- The odour emission rates used in the modelling appear very low in our experience, and there is a lack of detail on the measurement and derivation.

These concerns undermine confidence in the overall assessment and in our view should be further explored so that potential impacts are demonstrably robustly assessed and minimised before the facility is permitted to operate.



We hope you will find our comments helpful and of interest, however should you have any queries or wish to discuss any matters, please do not hesitate to contact us.

Yours sincerely,

**For RSK Environment Limited**

Prepared by:

Reviewed by:

A handwritten signature in blue ink, appearing to read 'W. Franklin', is positioned below the 'Prepared by:' label.

A handwritten signature in blue ink, appearing to read 'Dr Srinivas Srimath', is positioned below the 'Reviewed by:' label.

William Franklin  
Associate Director, Air Quality & Permitting

Dr Srinivas Srimath  
Director, Air Quality & Permitting