

Mr Gilbert Power
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November 16 2006

W0231-01

re: Notice in accordance with Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations

Dear Mr Power,

I am to refer to the above referenced application for a waste licence relating to a facility at Fingal Landfill, Nevitt, Lusk, County Dublin. Having examined the documentation submitted, I am to advise that the Agency is of the view that the documentation does not comply with Article 12 and Article 13 of the Waste Management (Licensing) Regulations.

You are therefore requested, in accordance with Article 14(2)(b)(ii) of the regulations, to take the steps and supply the information detailed below:

ARTICLE 12 COMPLIANCE REQUIREMENTS

- (i) Using available data from the studies carried out to date, comment on the likely accuracy of the location of the various geological formations underlying the site as detailed in GSI Geological Map Sheet 13 and Figure 4 of Volume 5 Appendix H. Provide a revised plan view of the bedrock geology underlying the site. It is suggested that you liaise with the Bedrock Section of the GSI in relation to this geological interpretation.
- (ii) Develop a vulnerability map for the study area based on site investigations carried out to date.
- (iii) Provide an assessment of the likely leakage rates from the landfill, including fate and transport, based on the calculations provided in the EPA Landfill Site Design Manual Appendix C. Provide details of the assumptions made as part of the calculations.



- (iv) The Geophysical investigation report (part of Volume 5 of the EIS) resistivity profiles suggest a number of potential faults, changes in lithology, fracture zones and areas of increased gravel contents. Please assess these further and comment on their importance in relation to the overall geological and hydrogeological assessment of the site. If necessary take this information into account in the reassessment of the underlying geology detailed in Point (i) above.
- (v) The report completed by Mott McDonald (dated 7th September 2006) submitted on behalf of Nevitt Lusk Action Group queries the cause for the change in hydraulic gradient from the west of the site to the east of the site as demonstrated in the groundwater contour maps in Appendix A5 of Volume 5 Attachment H of the EIS and also in the groundwater contour plots included in the Mott McDonald report. It is suggested that this may be related to groundwater discharging into a stream on the site, indicating that the clay overburden is not a barrier to groundwater flow. Please comment on the potential reasons for the change in hydraulic gradient and on the likely cause of the change based on information gathered as part of the study investigations.
- (vi) In a submission to the EPA from the GSI (in response to a request for information from the EPA), the GSI indicates that, in their opinion, 'the most fruitful area for exploration for further groundwater supplies would be south of Decoy Bridge along a zone that is roughly parallel to the M1'. In the event that abstraction wells were located in this area in the future as part of a public supply scheme it is anticipated that this may have an impact on/interaction with the zone of contribution from the current Bog of the Ring abstraction scheme. Please undertake a numerical modelling study (using MODFLOW or similar industry-accepted code) to determine (a) the impact on the groundwater flows at the proposed landfill area of the additional abstraction wells along the indicated area of land, and (b) the combined zone of contribution for the existing Bog of the Ring abstraction system and the theoretical new abstraction wells. Indicate the additional sustainable yield that may be attainable from boreholes along the area of land already mentioned. Document all model assumptions and input data.
- (vii) The Mott McDonald report referred to in Point (v) above includes calculations of vertical and horizontal groundwater flow and concludes that the downward vertical migration of groundwater (potentially including leachate) may form a significant proportion of the horizontal groundwater flow through the underlying bedrock. The applicant is requested to complete a more detailed assessment of the likely vertical and horizontal groundwater flow components beneath the site and to take into consideration the leakage rates as calculated under Point (iii) above.

ARTICLE 13 COMPLIANCE REQUIREMENTS

- (viii) Reassess the accuracy of the information provided in Geological Cross Section A-A' and B - B' presented in Appendix A1 of Technical Appendix H, taking

into account queries on these cross sections submitted by K. Cullen in his submission to the EPA dated 12/09/06.

- (ix) The Mott McDonald report also suggests that the potential seasonal variations in groundwater levels are not adequately assessed in the EIS as the assessment period covers June 2005 to January 2006. Provide any additional data gathered after January 2006 (include groundwater contour plots) and re-evaluate the seasonal variations in groundwater levels and flow directions. Include comments on the impact of drought and periods of high rainfall.

Please update the EIS documents as necessary, having regard to information requested in 'Article 12 Compliance Requirements'.

Your reply to this notice should include a revised non-technical summary (Application Form and EIS) which reflects the information you supply in compliance with the notice, insofar as that information impinges on the non-technical summary.

In the case where any drawings already submitted are subject to revision consequent on this request, a revised drawing should be prepared in each case. It is not sufficient to annotate the original drawing with a textual correction. Where such revised drawings are submitted, provide a list of drawing titles, drawing numbers and revision status, which correlates the revised drawings with the superseded versions.

Please supply the information in the form of a one original plus two copies within 6 weeks of the date of this notice. In addition submit sixteen copies of the requested information to the Agency in electronic searchable PDF format on CD-ROM. Please note that all maps/drawings should not exceed A3 in size.

Please note that the application's register number is **W0231-01**. Please direct all correspondence in relation to this matter to *Noeleen Keavey, Licensing Unit, Office of Licensing & Guidance, Environmental Protection Agency, Headquarters, PO Box 3000, Johnstown Castle Estate, County Wexford* quoting the register number.

Yours sincerely,



Dr Ian Marnane

Inspector

Office of Licensing & Guidance