

Oral Hearing into Objections to the Granting of a Waste Licence to Fingal County Council in Respect of a facility at Fingal landfill, Nevitt, Lusk, County Dublin.

Waste Licence Application W 0231-01

Closing Statement by: EurGeol Kevin Cullen PGeo.

The Applicant has indicated how the selection of the Nevitt site as the preferred site for the landfill was influenced by its R1 status on the GSI's Response Matrix for landfills. The R1 Response reflects the classification of the underlying bedrock aquifer as a Locally Important Aquifer and the presence of clay overlying the aquifer.

A similar R1 Response would apply to a potential landfill site in the Phoenix Park where the limestone is also rated as a Locally Important Aquifer and where the bedrock is covered by some 30m of glacial clay. However it would be clear, even to the most enthusiastic of landfill supporters, that the presence of Aras An Uachtarain, the Papal Cross and the Zoo are among the many fatal flaws in the Phoenix Park that would weigh heavily against a successful planning and licensing outcome even for a state of the art and non polluting landfill at this location.

The exact same situation occurs at Nevitt except that in this case the constraint or fatal flaw is hidden from view and only emerged following the detailed investigation of the site by the Applicant. The fatal flaw in the Nevitt case is the presence of a major groundwater resource beneath the foot print. This fatal flaw has become the proverbial 'elephant in the room' which the Applicant and the Agency have yet to comment upon or acknowledge in the licensing process.

The fact that the Applicant and the Agency remain the only ones that have failed to recognize the significance of this groundwater resource that exists beneath the Nevitt site only emphasizes the blinkered approach that both of these public bodies have adopted so far to the hydrogeological assessment of the Nevitt site.

Groundwater Protection Guidelines

We heard during the course of this Hearing from Ms. Doyle of the GSI how the National Groundwater Protection Scheme provides guidance in the outline stage of selecting sites for potentially polluting activities. Exactly the same advice was indicated to the Agency by Ms. Williams in response to Dr. Ian Marnane's letter to the GSI dated 23 August, 2006. Ms Williams advises of the national groundwater protection scheme that;

'The Groundwater Protection Responses, which combine the factors of aquifer category and groundwater vulnerability, are intended for use in outline planning and screening of potential development sites.'

It would be fair to say that choosing the preferred landfill site over the only productive aquifer in the whole of County Dublin and in close proximity to the largest groundwater

abstraction in the region i.e. The Bog of the Ring, would heighten or increase the risk of the site overlying a significant groundwater resource. And this is exactly what has been the outcome of the Applicants site investigations. This comprehensive work has clearly identified a significant groundwater resource beneath the landfill footprint of at least equal to , but potentially greater than that available at the Bog of the Ring.

The groundwater resource at Nevitt is located in the Locally Important Bedrock Aquifer and the overlying gravel aquifer.

However, while it is was obvious from the site investigation programme, which included pumping tests, that a very productive aquifer lay beneath the planned footprint the Applicant chose to proceed with the planning and licensing processes for the landfill.

The contention that the Nevitt site overlies a significant groundwater resource of at least the same capacity as the Bog of the Ring abstraction has not been contested by the Applicant, the GSI nor the Agency since the landfill project was first aired in public at the An Bord Pleanala Hearing in October 2006.

In the absence of any such rebuttal at;

1. at the ABP Hearing
2. this EPA Hearing
3. nor in the EIS
4. nor in the Applicants' submissions to the Agency
5. nor in the Inspector's Report

it would be reasonable to conclude that all parties now agree that the site overlies a major groundwater resource.

Both Ms. Williams of the GSI and Mr. Conroy of TES on behalf of the Applicant have indicated to this Hearing that, in their opinion, there are no barriers to the development of an additional groundwater abstraction from the limestone aquifer in north county Dublin. It follows therefore that there are no barriers to the development of the groundwater resource identified beneath the proposed landfill site at Nevitt.

The Inspector, while not recognizing the groundwater resource beneath the landfill footprint, did accept that locating the landfill at Nevitt would effectively prevent the future exploitation of groundwater in the general area simply on the precautionary principle.

This common sense conclusion that drawing a groundwater supply from beneath a landfill would not be considered Best Practice agrees with the guidance by the Groundwater Protection Scheme which prohibits landfill developments within the Inner Source Protection Zones of groundwater abstractions. This absolute prohibition is national policy and takes full account of the vulnerability rating associated with the Inner Source Protection Zone and is equally applicable to all sizes of abstractions.

Any suggestion that a groundwater abstraction at Nevitt can operate safely with the landfill also at this location is, I respectively suggest, nonsense.

Groundwater Resource at Nevitt

The Inspector's conclusion that the landfill would effectively prevent the development of the Nevitt groundwater resource means that the landfill would sterilize this groundwater resource forever. Unfortunately the Inspector did not quantify the resource that would be sterilized by his recommendation to grant the PD.

Is the resource of the same capacity as the Bog of the Ring which supplies half of the Balbriggan supply or is it even greater; who knows...most certainly the Inspector did not because all his efforts to elicit this information from the Applicant failed.

From his very first request for clarification on geological and hydrogeological matters in his letter to the Applicant on 11th October 2006 to his last request of March 23rd 2007 the Inspector has been supplied by the Applicant with less than accurate information and in some cases factually incorrect information. For example, it has been demonstrated at this Hearing that;

1. the map of the bedrock surface supplied by the Applicant is incorrect and does not take account of all the available borehole information
2. the thickness of the gravel map supplied by the Applicant has been shown to be incorrect and potentially misleading
3. the amended cross section provided by the Applicant has been shown to be incorrect and bearing no relation to the information provided to the Agency in the maps indicated at 1 and 2 above.
4. the conceptual model presented in the EIS has been shown not to reflect the hydrogeological conditions presented in the Applicants' drawings at 1, 2 and 3 above.
5. Dr. Sleeman's suggestion that the entire footprint is underlain by the Loughshinny Formation was completely ignored by the Applicant
6. The Inspector was mis-informed as to the GSI requirements for the classification of a Locally Important Gravel Aquifer. This error, coupled with the inaccurate depth of gravel map prevented any assessment I suggest by the Inspector of the groundwater potential or aquifer status of the gravel deposit found at Nevitt.

The last point is particularly interesting as while the Inspector refers to the gravel layer at the Nevitt site in his Report, the Director General of the Agency refers to the gravel aquifer at the Nevitt site in her letter to the Petitions Committee of the European Parliament.

In light of these inaccuracies I provided a set of drawings to the Hearing that offer a more realist interpretation of the Applicants' site investigations to assist the Hearing evaluate the Nevitt groundwater resource.

My East West cross section remains the only cross section that takes account of all the data collected by the Applicant, the outcrop information presented on the GSI Sheet 13 and Dr. Sleeman's recommendation. My North South cross section remains the only such section that passes through the length of the landfill.

The Agency requested the Applicant to submit a numerical modeling exercise to establish the resource potential and associated zone of contribution of a well field located to the east of the landfill footprint. Such a model would have, if properly constructed and calibrated, indicated to the Agency the likely full potential of the groundwater resources in this part of Fingal in general and beneath the landfill footprint in particular.

The resource model requested of the Applicant to investigate a well field to the east of the footprint would have included for the distribution of transmissivity values over the full depth of the bedrock aquifer and the overlying sand and gravel aquifer over the Tooman / Nevitt area, including the footprint. The subsequent calibration exercise would have indicated whether transmissivity values lower than, equal to or greater than those found at the Bog of the Ring were required to properly model and reproduce the base line conditions recorded by the Applicant. This exercise would therefore, had it been carried out, would have established the groundwater potential of the bedrock and gravel aquifers that exist below the footprint by attributing appropriate transmissivity values to the gravel and bedrock aquifers beneath the development site.

The Applicant did not carry out the requested numerical modeling exercise and the absence of the numerical model has prevented any assessment or determination by the Inspector of the full potential of the groundwater resource beneath the Nevitt site. In the event that any uncertainty remained after the initial calibration exercise a series of deeper wells could then be installed and targeted to provide a fuller understanding of the distribution of the transmissivity values throughout the bedrock aquifer beneath and around the development site.

The unexplained failure by the Agency to secure the modeling and the information which it had requested is of significant concern. Had the modelling been conducted, it would have disclosed the extent of the resource at the application site, and would have required the Applicant to disclose the assumptions upon which they had casually decided to discard this resource. The failure by the Agency, thus far, to elicit the information from the Applicant which it considered necessary to ensure compliance with the Waste Management (Licensing) Regulations 2004 must be remedied before a final decision on this application can be reached.

Of equal concern is the presentation (without explanation) of different versions of the same maps to the An Bord Pleanála Hearing, the Inspector and now to the EPA Hearing. At a minimum the Applicant should be requested to address this by submitting to all the parties revised and corrected versions of the Map of the Bedrock Surface, Map of Gravel Thickness and the East West Cross Section.

Unlike private sector developments, the Agencies decision to confirm the PD regarding the landfill at Nevitt will result in the 'eviction' (their word not mine) of some residents from lands that they have occupied for many years. In such circumstances it is vital that the information on which the Agency makes its determination is accurate. I respectfully suggest that the hydrogeological information contained in the Map of the Bedrock Surface, Map of Gravel Thickness and the East West Cross Section falls short of an accurate presentation of the Applicants' site investigations.

It is of particular regret that the Applicant failed to take the opportunity to revise or withdraw the East West Section submitted to the Agency in January 2007 when it was pointed out to the Applicant at this Hearing that it was factually incorrect and misleading. A fact that the Applicant has not contested. The failure of the Applicant to revise or withdraw this drawing greatly diminishes the integrity and value of the Hearing in its examination of the objections raised to the development.

Alternative Groundwater Abstraction

The Applicant, without any request from the Agency to do so, proffered to the Agency a possible groundwater abstraction to the south of Nevitt as an alternative to the one that would be lost at the landfill site.

The Inspector appears to balance the loss of the Nevitt groundwater resource with the possibility of developing the alternative groundwater abstraction to the south of the footprint identified by the Applicant.

Unfortunately the Applicant failed to indicate to the Inspector that any reliance by him on such an abstraction replacing the proven resource at Nevitt should be tempered by the fact that a number of the proposed production well sites in the alternative well field are located in a lower rated bedrock aquifer.

The Inspector was also incorrect to conclude that the landfill would fall outside the zone of contribution associated with the proposed alternative abstraction. My drawing No. 7 shows that the landfill will as a matter of fact fall within the zone of contribution of this abstraction and this point has not been contested by the Applicant at this Hearing.

Contrary to Guidelines and Legislation

It is my contention as outlined in my submission to this Hearing that the development of the landfill at Nevitt will be contrary to the;

1. 2006 EPA Guidelines on landfill site selection
2. National Guidelines on Groundwater Protection
3. Water Framework Directive
4. Sustainable Development

It seems to me that the development of the landfill at Nevitt will deny the groundwater resource that has been proven to exist here to future generations. By any standard such

an outcome must be contrary to the concept of Sustainable Development and which is defined on the Department of the Environment and Local Government web page as;

'Sustainable Development is usually defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

Concluding Remarks

We have heard from TDs and MEPs how both Government Departments and the EU are watching with some interest the outcome of this licensing process. All seem to be agreed that a conflict exists here between the protection of groundwater resources and the need to provide waste management infrastructure.

Equally all have pointed to Ireland's obligations under a raft of EU and national legislation to protect groundwater resources. None have, as far as I am aware, shown any legislative requirement to build a landfill at this location.

Hopefully the Agency will also recognise that the licensing of the landfill at this location is directly contrary to the;

1. 2006 EPA Guidelines on landfill site selection
2. National Guidelines on Groundwater Protection
3. Water Framework Directive
4. Sustainable Development

Common sense dictates that the development of a landfill at the Nevitt site is unsustainable.

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