Due 19/4
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Planning Report

Reg. Reference:	**04/371**
Applicant:	Bord na Mona
Location:	Drehid, Derrinturn
Development:	Residual Sanitary Landfill Site
Application Type:	Permission
Date of Receipt of Application:	24th February 2004
Site Inspection Date:	31st March 2004

1.0 CURRENT APPLICATION

This application is for the development of a landfill site and composting facility with a lifespan of 20 years. The site is on Bord na Mona lands – Timahoe Bog; a cutaway bog that formerly provided fuel for the Allenwood power station. The Environmental Impact Statement (EIS) states that the bog was harvested until 1990. The Bord na Mona property is stated to cover an area of about 2,544ha. The public notices describe the development in full as:

The development will consist of an engineered landfill site (footprint 21.2 hectacres (ha)), comprising 8 No. phases, to accept up to 120,000 tonnes per annum of non-hazardous residual municipal waste for disposal; a composting facility with a capacity of 25,000 tonnes per annum; for an operational lifespan of 20 years. In addition to the waste acceptance period, permission is also sought for an additional 2 years to facilitate preliminary development works prior to waste acceptance and restoration of the site following cessation of waste acceptance. Permission is also sought for ancillary facilities including landscaping; provision of improved site entrance and access road (4,800 metres (m)) from the R403 to the facility entrance; internal site haul roads (2,380m); clay borrow area (10ha) and sand & gravel borrow area (12.7ha) for the extraction of 212,300 cubic metres (cu m) of clay and 248,410 cu m of sand and gravel respectively, to be used for the construction of the proposed facility; composting building and biofilter (4,157 square metres (sq m)); administration building (434 sq m); parking (700 sq m) for 12 No. cars, two delivery vans and one coach; 2 No. weighbridges (140 sq m) and weighbridge reception kiosk (7.5 sq m); maintenance facility (180 sq m); bunded concrete hardstand for waste inspection and quarantine (585 sq m); bunded oil storage area (22.5 sq m); on-site water borehole; wheelwash (180 sq m); surface water drainage system; oil interceptor and grip trap; 5 No. surface water settlement lagoons (total area 5,464 sq m); 2 No. leachate holding tanks (combined capacity of 400 cu m) and leachate pump sump at bunded concrete hardstand leachate management facility (1,000 sq m); landfill gas collection compound and gas flare (35 sq m); security fencing and all other site development works above and below ground on a total site area of 139ha.

The landfill and other parts of the development are located far into the Bord na Mona property at Drehid, necessitating the construction of a 4.6km access road. This takes access off the Allenwood to Derrinturn road (R403) at Killinagh Upper. The site comprises 139ha, not large when considered as part of the overall property.

The central part of the site is the location for the proposed landfill, which is surrounded by a berm, surface water swale and road. This is also the location of the proposed composting plant.

The landfill will have a capacity of 110,000 to 120,000 tonnes per annum and an operating life of 20 years. It has an area of 21.2ha. It will be filled to a depth of about 15-20m and will have a capacity of 2.3 million tonnes. It will be a phased development, of eight phases each lasting 2 to 3 years. Each phase will be capped when finished. The phases in turn are subdivided into 4 to 6 cells each being filled over a period of about 6 months. The working face of the landfill will be no more than about 40m by 40m. A basal lining of High Density Polyethylene and Bentonite

Enhance Sand is to be used to line the base of the landfill/ A leachate collection system is to be installed and the leachate treated at an effluent treatment plant.

The associated composting facility will have a capacity of 25,000 per annum. It is intended to produce compost for landscaping and for the restoration of the site. This facility will accept source separated biowaste. This will take place in an enclosed warehouse building, 11.5m high to the ridge and a plan area of 72m by 55m. It is a warehouse style building of profiled steel cladding. The process etc is described in detail in Section 3.3.17 of the EIS.

Other associated works are:

- A leachate management facility with pumping station and 200m^3 holding tank.
- A landfill gas flare compound. If feasible, it may be used to generate electricity.
- Surface water retention lagoons (3 no.)
- Administration building and associated parking
- Maintenance building
- Waste inspection/quarantine area
- Bunded oil storage area
- Settlement lagoons for surface water treatment

The proposed administration building is a dormer structure containing offices, meeting rooms, laboratories etc. It has a plan area of 24.4m by 8.6m and a ridge height of 6.25m.

The maintenance building is a single storey structure again of profiled steel cladding with a ridge height of 6m and a plan area of 17.83m by 10m.

Also within the site are two "barrow" areas for the sourcing of clay, sand and gravel. These have an area of about 10ha (clay) and 12.7ha (sand and gravel). (A table showing the areas of the various elements of the development is included in the EIS – Section 2.1.1). The former is to the north-west of the landfill; the latter to the south-west. These each have associated surface water settlement lagoons. Further details are provided in Section 3.11 of the EIS.

The proposed road is 4.8km long and 7.5m wide. At the entrance from the public road is a right turning lane leading into the site. 160m sight lines are indicated. The entrance would be gated. There will be 2 no. weighbridges and an associated kiosk and wheel wash in the heart of the site.

The site is to operate between 8.00am and 6.30pm, Monday to Saturday. Site management is described in detail in Section 3.13 of the EIS. Proposals for the control of nuisances are detailed in Section 3.14 – bird control, fire, litter, odour, vermin. Proposals for monitoring are contained in Section 3.15.

A civic amenity facility is not proposed (EIS, Section 3.3.16).

2.0 THE ENVIRONMENTAL IMPACT STATEMENT

The application is accompanied by a detailed Environmental Impact Statement. Section 1.1 points to expertise of Bord na Mona in operating a landfill for ash from the power station operated by Edenderry Power Ltd. It also has experience of composting in the UK.

The EIS states that the closest house to the proposed landfill is at a distance of 1070m. The closest to the clay borrow is 840m and the closest to the sand and gravel borrow is 670m.

The site is described as cutaway bog. It is underlain by basin peat deposits with till underneath. Bedrock is limestone. Water quality is generally good but with elevated levels of ammonia and iron. Surrounding landuse is stated to be pastureland and forestry with isolated low-density housing. There are few open views of the site.

Some archaeological remains are noted in the area of the site. These are two toghers on site but it is stated that these appear to have been destroyed by turf cutting.
The issue of alternative sites is investigated in Section 1.5.2. This notes that Fehily Timoney, working on behalf of the County Council, identified the proposed site. Three sites were shortlisted (Drehid, Usk and Newtowndonore) and the preferred site was Drehid. Its favourable features were:

- Large land bank
- Remoteness from dwellings
- Availability of clay and gavel
- Aquifer protection.

The EIS goes into some detail on the policy background on waste (See Section 1.2). This includes policies for:

- The development of landfills on a regional basis.
- The involvement of the private sector.
- Increased dependence on waste prevention, minimisation, recycling, energy recovery with landfill as a last option.
- Increased use of composting.

The following are some brief notes on the analysis of the EIS of the impacts that this proposal may have on the environment and the measures proposed to address and ameliorate those impacts.

2.1 Air/Climate

This section of the development has been reported on by Fehily Timoney.

The distance of the site from the nearest houses ameliorates noise impacts. Levels will be well within EPA guidelines. Noise arising from traffic will be negligible. The borrows for clay, sand and gravel are remote from houses.

Odours were in the past a problem with landfills due to poor capping and gas collection. The proposals to cap the facility weekly and collect gasses as well as proposals for air collection systems, air scrubbers and biofilters are all desgined to obviate the problem. An odour modelling assessment has been carried out.

2.2 Geology and Hydrogeology

This section of the development has been reported on by Fehily Timoney.

Sands, gavels and clay will be extracted from the borrow areas. There will be no impact on bedrock. For aquifer protection, the site falls within zone R1, the lowest risk category for landfill site selection. There are no groundwater abstraction points within 1km of the site and the subsoil is of very low permeability.

The landfill is designed to prevent loss of leachate. This is to be pumped to holding tanks and the leachate removed from site by tanker. Effluent from the waste water treatment plant on site will also go to the holding tanks.

2.3 Surface Water

This section of the development has been reported on by Fehily Timoney.

The site drains to the Cushaling River. No alterations to surface water streams etc are envisaged. The development includes a surface water collection system with oil interceptors, grit traps and settlement lagoons.

2.4 Landscape

Section 2.6 of the EIS gives a detailed description of the landscape into which the development is to be put. The site is within a very large cutaway bog, itself in a generally flat and rural landscape. Public views towards the site are noted (see Fig. 2.6.1).

Section 4.5 details potential impacts of the development on the landscape and proposed mitigation measures. It is noted that the site is within an area of proposed water recreation and amenity/forestry use. The proposed landfill is considered to be "not totally contrary to these objectives" (Section 4.5.1.2). The creation of a mound on the otherwise flat surface of the bog will have a significant, localised visual impact. The large buildings proposed, being located on a flat and open landscape where there are no existing buildings, will also have a considerable impact (Section 4.5.1.4). Views of the site are greatly ameliorated by distance, by intervening trees and hedges. Amenities and development plan proposals in the vicinity are noted. The mound of the landfill facility will have a visual impact but this is limited by intervening vegetation and the paucity of views of the site. Native trees will be established on the site perimeter. "All attempts will be made to integrate the development into the site, in particular by establishment of effective tree/scrub screens to site boundaries to reduce visual impact on surrounding receptors." (Section 4.5.1.6).

Recommendations for mitigation measures are detailed in brief in Section 4.5.2. These include:

- Planting of a hedgerow along the minor road to the north (presumably the L5025.
- Woodland planting along the permiter of the site.
- Hedgerow retention where possible at the site entrance.
- Further planting on the site when decomissioned.

- Flooding of the barrow pits.
- Construction of a screening berm on the north end of the landfill.

2.5 Ecology

The area is one of cutaway bog. It is stated that commercial peat production continued for over 40 years, ending about 13 years ago (Section 2.7.2.1). Only a shallow layer of peat remains. There is an extensive network of drainage channels. The bog as a whole is rated as being of "*high local ecological value*" (Section 2.7.2.8). The site – other than a small area of raised bog at the south-west corner does not contain any habitats of such value. It is considered to be of moderate local value. "*The vegetation of the bog is much depleted and no longer resembles that of an intact raised bog.*" No impacts on any designated conservation areas are predicted. Potential pollution by leachate is to be prevented by the installation of suitable leachate collection and disposal mechanisms. The finished sections of the landfill are to be capped and covered with natural subsoil and peat. Species composition of planting will reflect the local environment with only native species used.

Proposals for rodent control are also given (Section 4.6.4.2). The reduced fraction of biodegradable waste will make the site less attractive to vermin than traditional landfills.

2.6 Human Beings

Tourist facilities in the area are well removed from the site. There is no housing or other infrastructure within or close to the site. Operation of the facility in accordance with the principles of BATNEEC and in accordance with the conditions of the licence and planning permission should obviate any impact on property or property values in the vicinity.

A local community liaison group is proposed. Bord na Mona will invest 1.27 per tonne of waste into a "local community development fund".

Section 4.7 of the EIS also reviews possible health and safety issues arising. Safety issues are largely addressed by securing the site from casual public access – hardly a difficult matter given the site's remote location. Health literature on the impacts of landfills is briefly considered.

The Robertstown Countryside proposals are briefly touched upon (Section 4.7.3). Also noted are some golf courses in the vicinity and the Allenwood football pitch beside the proposed entrance. Protected structures, tourist facilities etc are also considered.

Concerning impacts on property value, a British study is quoted which referred to an impact on house values if the house was within 0.5 miles of the site. As no houses are located this close to the landfill, it is argued that there will be no such impact (Section 4.7.4).

2.7 Archaeology

This section of the development has been reported on by Fehily Timoney.

Excavation avoids the location of known monuments. The extent of survival of the recorded toghers will be checked when the site is being cleared.

2.8 Infrastructure and Traffic

Predicted traffic levels are 104 vehicle movements per day (64HCV and 40 cars or light goods vehicles.) There will be a small increase of traffic on R403. The overall impact will not be significant. Nearly all construction materials are sourced on site so construction phase will have minimal impact on roads.

At the entrance, a right turning lane is proposed and sight distances are said to satisfy design speeds of 85km/hr. A wheel wash will prevent soil etc being carried onto the public road.

This section of the development has been reported on by the Council's Roads Section.

2.9 Interactions

The greatest interactions predicted are between human beings and four of the other criteria, namely visual intrusion, noise, air quality and traffic. It is contended that the mitigation measures proposed will obviate these impacts or render them insignificant. The development will also have the positive impact of providing a facility for the disposal of residual waste and for the recovery of biodegradable waste.

3.0 THE SITE

The site is located in the north-west of the county on the cut away Bord na Mona boglands north of Allenwood. The site is part of a massive property which must be one of the largest, if not the largest, properties in the county. The actual landfill etc is located within the heart of the property in an area of cut away bog and far away from pubic roads, houses etc. Photographs of the site and general location are provided in the EIS (See particularly Section 2.6, Plates 1 to 16).

The general location is very rural, a mixture of farmland and bogland. The latter has been worked in conjunction with the now demolished Allenwood power station. There are no large towns in the vicinity. The closest villages are:

- Allenwood to the south,
- Coill Dubh to the south-east
- Timahoe to the east
- Derrinturn to the west
- Kilshanchoe to the north.

All are several kilometers from the proposed landfill.

The landscape of the area is very flat. The public roads tend to avoid the bogland so views of Bord na Mona's massive property are scarce. The only significant view of it from a public road is from the Timahoe to Carbury road (L5025) to the north of the site. A section of this road cuts through the bogland and through the Bord na Mona property. There is also a view from the end of a minor road (K50222) to the south-west of the landfill site. Both of these viewing points are at a considerable remove from the proposed landfill site.

There is considerable ribbon development along some of the roads in the area especially along the Allenwood/Derrinturn road and along other roads in the vicinity of Derrinturn.

The bulk of the site is cut away bogland, remote from roads and, in many places screened from public view by trees – some plantations and some natural. The closest roads to the proposed facility are:

- The Timahoe to Carbury road (L5025). This road runs by the north of the proposed facility and, at its closest, is about 0.52km from the site and about 0.86km from the landfill. The closest part of the road is a typical bog road, bounded by the Bord na Mona property on both sides. The closest house to the site, to the west of the Bord na Mona property is about 0.65km from the site and about 1.0km from the landfill.
- A minor, dead-end road runs off the R403 into the townland of Kilkeaskin. This is marked as L50222 on Figure 2.1.1 of the EIS. This is to the south-west of the landfill site. The end of this road is a dirt track and from it there are views in the general direction of the proposed facility. The views are part obscured by trees. There are houses along this road as well as a riding stables (Harmony Cottage Stables). The closest house on this road is about 1.2km from the site and about 1.5km from the landfill.
- Another minor, dead-end road runs into the townland of Loughnacush. (This road is not numbered on Drawing 2.1.1.) There are houses along this road

including one at the very end. The latter is about 0.9km from the site and 1.55km from the landfill.

Access to the proposed development would be off the R403 – Allenwood to Derrinturn Road at Killinagh Upper. This road is busy, straight and divided by a broken white line. It shows some deformation at the edges. On one side of the entrance is a sports field. On the other is farmland beyond which are some houses. There is also a house diagonally opposite the entrance. There is a considerable amount of ribbon development along this road.

The proposed entrance road will run across a level field into the bogland behind. This field is defined by good hedgerow boundaries which screen the sports field to the south but less so the houses to the north which were developed out of the same field.

4.0 OBJECTIONS/REPRESENTATIONS

Submission have been received from the following prescribed organisation.

- Dept of Environment note proximity of the development to two recorded monuments (Toghers). Conditions regarding archaeology are recommended for inclusion in the final decision.
- An Taisce contend that the applicants have not demonstrated compliance with EU Directives, that the proposal would materially contravene the Robertstown Countryside provisions of the County Development Plan and would impact upon archaeological monuments.
- The Southern Regional Fisheries Board has no objection in principle with some concerns about treatment of leachate and silt impacts on streams.

Public objections have been received from the following (Some of the names are not fully legible on the submissions and so may be mistakenly identified below:

- Lillie & Peter Gannon
- Brian Mangan
- Anthony Mangan
- Patrick Mangan
- Ailish Kelly
- Brendan Cummins
- Daniel Thornton
- Nicholas Sutton
- David Thornton
- Brendan Thornton
- Gemma Thornton
- Pauline Thornton
- Alan Flood
- Deneise Goulding
- Naimh Moore
- Niall Moore
- Andy Flood
- Nuala Flood
- Eimer Flood
- Studham Lewis
- David Kelly
- Feiona Kelly
- Sean Gracie
- Kathleen Gracie
- Willie Kelly
- John Kelly
- Eddie Mongan
- Brigid Mongan
- Robert Healey
- Angela McNally
- Paschal Corcoran
- Kathleen Brennan
- Mary Kerrigan
- Tom McNally
- Naomi Doyle
- Ben Doyle
- Terry Groome
- Delma Groome
- Patrick Daly
- William Watson
- Dierdre Bond
- Honor Wachman
- Roderick Wachman
- Averil Wachman
- Peter Wachman
- David Wachman
- Gillian Wachman
- Sheila O'Brien
- Joanne Jackson
- Dorothee Hiby-Durst
- Gerry Wood
- Evelyn Wood
- Matt Lohan
- Caroline Hurley
- Michael Byrne
- Mary Pender
- Oliver Kearney
- Maureen Kearney
- Helen Browne
- Heather Brierley
- Paul Kelly
- Mary Kelly
- Grace Kelly
- Sean Breneton

- Sheila Breneton
- Paul Dowdall
- Christine Dowdall
- Edward Mangan
- Noel Maher
- Seamus Malone
- John Molloy
- Caroline Cully
- Margaret Logan
- Gerard Maginn
- Una Dempsey
- James Dunne
- Niall Logan
- Amanda O Brien
- Paul Connell
- Joe O'Rourke
- Edward G. Herbert
- Edward Dunne
- Edward Gannon
- Laim Hartford
- Peter Mulready
- Finbar Redmund
- Bernie Redmund
- Heike Holstein
- Fiona McKeon
- Christopher McKeon
- Raymond Langan
- Christopher Colgan
- Sarah McNally
- James Holton
- Kevin McCann
- Teresa Noonan
- David Tansey
- Caroline Costello
- Harriet Glennon
- Patrick J Holton
- Frances Donnelly?
- Sean Donnelly?
- Mary Regan
- Amanda O'Rourke
- Rita McCarthy Lenehan
- David Holton
- Bernard J. Durkan T.D.
- James O Rourke
- Peter Mulready
- John Logan
- Bridie Logan
- Breda Logan
- Thomas Maher
- Tom Malone
- Yvonne O Conor
- Seamus Malone
- Noel Maher
- Caroline Hurley
- Micheal Hoey
- James Brady
- North West Kildare Environmental Promotion Group
- David Malone
- Environmental Action Alliance-Ireland

These objections raise the following matters:

- The proposed development is in breach of the County Development Plan.
- It contravenes the Waste Management Plan.
- Incorrect zoning, the bog was designated to become a lake amenity which would have raised the social and tourist profile of the village.
- Is there any plan to offset the footprint from the proposal by creating new amenity wetlands in County Kildare?
- Site should be surveyed for biodiversity and a representative sample of such sites should be protected.
- The site undoubtedly contains potential wildlife corridors which should be investigated.
- Landfill will adversely affect property and land alongside the Barony River as a result of the geological and hydro-geological conditions which are unsuitable.

- Flooding and contamination affecting nearby property, people and farm animals
- Farming activity being blamed for pollution arising from landfill leakage
- The use of poisons for vermin control with serious implication for farmers when poisoned wildlife stray onto nearby farmland – birds may carry poisoned material for miles, secondary poisoning is a real risk
- Constant foul odours and heavy traffic will repel people from visiting the village and community.
- Increased noise pollution
- Traffic congestion
- Heavy vibrational disturbance from traffic
- There is no clear defined routes for traffic management
- Major accident hazard on poor inadequate roads
- Heavy vehicles will cause danger and hardship to local population, particularly children and the elderly
- Increase in traffic on already poor road infrastructure
- Traffic pollution
- Dangerous emissions from the increased traffic and the dump
- Subsidence already apparent on the R403 between Allenwood Cross and the proposed facility will exacerbate this
- There is no footpath, verge or lighting between Allenwood Cross and proposed facility
- Hugh traffic delays and congestion
- Landfill traffic will severely restrict view from local residential property when driving out onto the road
- Children's soccer pitches within close range of proposed site, concern for health and welfare
- Sports club will be thrown into a situation of negative equity
- Demise of sports facilities due to nearby location of dump with loss for local community
- Loss of unique heritage which has huge environmental significance
- General health concerns for all but particularly children
- Possible pollution of drinking water
- Bogs are the home of nature and should be used as a tourist attraction
- Destruction of natural flora and fauna
- Loss of important public amenity
- Diminished quality of life with no access to walking in the bog
- Depreciation in value of homes and farms in area
- Risk of disease
- Invasion of rats and birds into homes and gardens
- Increased contamination risk from water and air pollution
- Contamination of Well water, fields and rivers
- A misuse of a National Treasure which the bog is
- The bog should be preserved for its beauty and importance. It should be left to regenerate as it is already doing
- Insufficient landscaping information on proposal
- There is a poor ecology survey
- It is not clear that proposal will not take waste from other countries

- Despite controls pollution will be caused by human error and lack of inspections
- The promoter does not own the Bog
- Concern over Bord na Mona's track record in terms of protecting rivers, water supplies and wildlife environment on the bogs
- Lack of communication between Bord na Mona and local communities
- The threat to/destruction of ancient toghers
- Bord na Mona are not experienced in the operation of landfill and therefore there is no way of accessing their capability of running such
- That if dump permitted, it will be alive for all time and not the 20 years as stated
- There will be no on site leachate treatment
- Gases and leachate may escape from the landfill for decades after it is closed contributing to an overall rise in toxicity in surrounding areas, with a potentially catastrophic affect as these toxins make their way into the human food chain. Traceability is an integral part of tighter quality control from the Department of Agriculture and the EU. The development will therefore be potentially putting farmers out of business. Evidence of these so-called black spots exists in Germany and other European countries
- No cut off point as to the size of the landfill
- The possible total and irreversible loss of the bog as a public amenity
- No need if proper recycling and waste reduction implemented
- The financial incentive to encourage recycling can be achieved by imposing higher recycling levies on landfill
- Too close to residential and built-up areas
- The visual impact of the mound over twenty years is not properly explained
- Kildare County Council should not have allowed Bord na Mona to continue ahead with the project without offering it for tender
- Bord na Mona are not the legal owners of all the lands they have presented on the planning application

The following points have also been raised with particular reference to the Bord na Mona E.I.S. Many points have already been noted in the above. (The objectors names are included in above list).

- No environmental management plan exists
- The disturbance of asbestos during site construction and the potential hazard created is not addressed
- Failure to clarify link between Power Plant at Edenberry and use of cut away bogs
- This development contravenes the National Biodiversity plan
- Lack of full archaeological field survey as recommended
- Failure to explain the term "residual landfill" and give details of same
- A need to carry out a Strategic Environmental Impact Assessment
- The proposed landfill was never assessed in compliance with the European Directive for the location of landfill sites with lack of consideration of alternative sites and the main reasons for its choice. It is deemed that the site selection procedure was seriously flawed

- The existence of groundwater, the geological and hydrogeological conditions and risk of flooding make the chosen location unsuitable
- Non-compliance with European Waste Management Hierarchy of Sustainable Development Law
- Failure to show how disposal charges shall be such as to meet the costs incurred by Bord na Mona in the development and operation of a landfill, including monitoring the facility for at least 30 years after closure
- The aftercare management of site very poorly addressed
- The inaccuracy of figures given in the EIS
- The selective and prejudicial use and interpretation of data in the EIS making this a flawed document that should be rejected
- The use of a desktop study which is out of date and unacceptable and does not show the actual growth of the local population
- The failure to address other means of dealing with waste as alternative
- The assumption that Kildare County Council will implement National and EU waste reduction strategies with no up to date information on current initiatives and their effects
- Failure to show relevancy of reference to the Bord's ash facility in Clonbullogue with no detailed information on same
- No copy of contract between Bord na Mona and Kildare County Council in relation to the Drehid Waste Management Project
- The creation of an anticompetitive or monopoly situation which is against existing Irish and European legislation
- The waste not being baled highlights a lack of commitment to the policy of BATNEEC
- Poor attention to Compost facility which demands an EIS of its own
- Little attention to the Sand, Gravel and Clay borrowing which comprise substantial developments in themselves
- The issue of fire risk has not been adequately dealt with
- No planning application should be considered which does not contain clear and appropriate measures for landscaping
- The project is in breach of multiple EU directives

5.0 REPORTS

5.1 Fehily Timoney

Fehily Timoney report that they consider that the proposal complies with the Waste Management Plan.

They require the submission of further information on a wide range of issues.

5.2 Road Section

The Roads Section has no objection in principle to the proposed development but are seeking some further information regarding traffic analysis and the site entrance.

5.3 National Roads Design Office

No objections.

5.4 Health Officer

Further information is required concerning matters of:

- Ground water
- Surface water
- Dust
- Leachate.

5.5 Area Engineer

There is no objection in principle to the proposal. Further information is required.

5.6 Fire Officer

Further information required.

6.0 PLANNING BACKGROUND

6.1 Regional Planning Guidelines for the Greater Dublin Area (1999)

The Guidelines state that the population of the Greater Dublin Area in 1996 was 1.4 million (P. 11). Growth predictions to the year 2011 vary from 1.545 million to 1.650 million (Table 3.1). It was considered prudent to plan for the latter higher figure.

It noted that waste was an issue throughout the area (P. 20). Available landfill space had a predicted life of only 2.5 years (P. 20). The Guidelines otherwise have little to say on the subject of solid waste disposal. The proposals on sanitary services infrastructure concentrate on wastewater and water supply.

6.2 Draft Regional Planning Guidelines for the Greater Dublin Area (Dec 2003)

Draft Guidelines for the Greater Dublin Area have been produced by the Mid-East and Dublin Regional Authorities. This document seeks to co-ordinate development plans within this region as required by Part II, Chapter III of the Planning and Development Act 2000. Key issues for the guidelines include the provision for economic and population growth in a sustainable manner (Section 1.8). Clearly provision for refuse disposal will be a critical part of this. Objectives include the following:

- Integration of plans between regions and within the region (Section 3.3, Objective 1.1).
- It seeks to "promote sustainability as regards .... waste management" amongst other matters (Section 3.3, Goal4).
- *"To coordinate settlement pattern with strategic plans for .... Waste management disposal".*
- *"Waste strategies should be coordinated across the region to allow flexibility in the management of waste services."* (Section 3.3, Objective 4.2).

The document also addresses issues of waste disposal in some detail in Section 8.6.3. It notes that targets in the waste management plans of the region will not be met due to increasing population, economic growth and resultant increasing waste generation.

- *"Private sector proposals to develop landfill sites in Wicklow, Kildare and Meath are likely to be developed in the medium term. Should such proposals proceed, the transferring of waste between regions could be reconsidered so as to give flexibility in dealing with waste management at a regional level. New facilities should be allowed to perform their required function in one region and also form part of the wider strategy that includes waste management in another region."*
- *"The waste management industry (which includes Planning Authorities and private operators) should aim to develop integrated waste management facilities infrastructure in the GDA (Greater Dublin Area). This infrastructure includes new landfills, waste to energy plants, biological treatment and recycling facilities."*

The need for additional infrastructure should be assessed in terms of the needs of the Greater Dublin region, rather than the existing waste management regions.

The guidelines also emphasise the need to integrate the delivery of infrastructure in tandem with planned developments (Section 11).

6.3 Kildare County Development Plan 1999.\

This is the current statutory development plan for the area. There is no zoning applicable to the site – as is the case for most rural areas.

6.3.1 Waste Disposal

Section 1.18.3 of the plan notes the legislative background on the subject of waste. Existing disposal is by landfill. Landfill was centralised to Silliot Hill (Section 1.18.4).

Policies on waste disposal are stated in Section 2.12.2. Waste prevention, minimisation, reuse, recycling and recovery will be encouraged and will take precedence over landfill. Landfil sites "*will be run to acceptable standards*" and will "*be rehabilitated on completion of tipping*".

6.3.2 Robertstown Countryside

This refers to a rural area focused on the small, canal side village of Robertstown and covering a large rural area in its vicinity. It includes large areas of Bord na Mona bogland (Section 1.23.8).

Section 2.23(H) details policies on the Robertstown countryside. It is policy *"to protect the amenities of this area and to encourage the development of water recreation facilities and other amenities". "The Council will assist the Robertstown Countryside Committee and other bodies interested in developing the waterways, walking routes and other amenities of the area and will strictly control development".*

Map No. 3 of the Development Plan identifies the site as being around the margin of two designated areas of the Robertstown Countryside:

- Area A8(3) – Water Recreation Area and
- Area A8(4) – Cut-Away Bogs for Future Amenity Forestry Use.

Map No. 1.5 (Robertstown Countryside) identifies the site as being on the boundary of two areas:

- Boglands and
- Bog Areas suitable for Flooding.

6.3.3 Boglands

Section 1.24 addresses the subject of boglands of which the county has 9000ha. Section 2.25 states that it will be council policy on cutaway bogs to *"encourage the use of these areas for amenity forestry, using a growth of mixed native deciduous woodlands where possible, in line with the policies for the Robertstown Countryside,*

and in other areas for forestry and agriculture." "It will be the policy of the Council to ensure that the creation of tourist and amenity resources will be facilitated, and that the quality of ground and surface water will not be impaired." It is also policy to create a millennium forest in the area.

6.4 Waste Management Strategy

A Waste Management Strategy has been prepared for the County. The Council's existing landfill facility is at Silliot Hill, the only facility operated by the Council (Section 2.5). The document states that it is "nearing closure" but it is in fact now closed and is used only as a reception area for waste that is transferred elsewhere. A number of other facilities are in the county:

- Nephin Trading have a site at Kerdiffstown Road
- KTK Sand and Gravel have a site taking construction and demolition waste at Brownstown
- The Arthurstown site at Kill is operated by the Dublin authorities.
- Yellow Bins operate a composting facility.

Increasing population levels (Section 3.2) and the increasing levels of waste produced per household and growing commercial activity are all going to place an additional strain on disposal facilities. Against this must be set government policy to pursue policies of waste prevention, reduction and recycling (Section 3.3). The government document "Changing our Ways" advocated:

- Diversion of 50% of household waste away from landfill
- 65% reduction of biodegradable waste consigned to landfill
- Development of waste recovery and composting
- Recycling of 35% of municipal waste
- Recycling of 50%, rising to 85% of construction and demolition waste
- Fewer, better quality landfill sites
- 80% reduction in methane emissions from landfill.

Policy of disposal of waste (Section 4.2, PP64-65) refers to use of facilities in adjoining counties when Silliot Hill is full. The Council will provide a materials recovery facility, waste transfer facilities, biological treatment centre and residual landfill (P. 64).

> *"The Council will provide, or arrange for the provision of, a new engineered landfill disposal site capable of accepting residual waste material generated in the County over a 20-year period. This facility will be developed as a residual site and so a transfer station will also be required."* (Item 6, P. 65)

The document also recognizes the increasing involvement of the private sector that is already operating a number of facilities in the county (Section 3.3).

6.5 Planning History

There are a number of previous applications.

- 04/222 – A previous invalid application for a landfill and composting facility.
- 03/1379 – A grant of permission for a pilot-scale environmental technologies research station.

- 03/1294 – An invalid application for a pilot-scale environmental technologies research station.
- 96/246 – A grant of permission for an electric line.

6.6 Legislation

The Waste Management Act 1996, as amended by the Waste Management Amendment Act 2001 and the Planning and Development Act 2000 are of critical importance to the assessment of this application. The following need to be noted:

- The development will require a licence from the Environmental Protection Agency (EPA) under the Waste Management Act. This fact is referred to in the public notices.
- Section 257 of the Planning and Development Act 2000 amends Section 54 of the Waste Management Act 1996. This effectively means that, in dealing with the planning application, matters of environmental pollution may be considered in deciding whether to grant or refuse permission but conditions on the control of emissions may not be attached.
- Under the provisions of the Waste Management Act 1996 (S 22(10A) (as amended by Section 4 of the Waste Management (Amendment) Act 2001, Section 4), the development plan shall be deemed to include the objectives of the Waste Management Plan. This is relevant in determining whether or not the proposal complies with the County Development Plan.
- Section 4 of the Waste Management (Amendment) Act 2001, (inserted S 22(10B) into the Waste Management Act 1996) requires that, where the Council proposes to grant permission for a development that is consistent with the Waste Management plan but conflicts with another objective of the development plan, the manager shall publish notice to that effect and give a copy to any objectors. Any objections received shall be considered in the making of the decision.

The facility will require a licence from the Environmental Protection Agency under the Waste Management Acts.

The EIS goes into considerable detail on the domestic and European legislative framework for the treatment and disposal of waste (See Sections 1.2 and 1.8).

7.0 ASSESSMENT

7.1 General Suitability of Location

This application has given rise to a wide range of objections and concerns. However, there are a number of features of this site that render it particularly suited to the development proposed. In my view, the most significant of these are:

- The site is particularly remote from houses and other sensitive receptors – schools, commercial premises, tourist facilities etc. There is a clear separation of over 1km from the nearest house. In the context of rural Ireland, and specifically the Kildare rural landscape, that is an exceptional separation that is unlikely to be bettered. Such a separation greatly helps in the process of minimising the impact of such facilities.
- The site is located on an exceptionally large holding of about 2500ha. This must be one of the largest, if not the largest, landholdings in the whole of County Kildare. Such a landholding gives the applicant great scope for works which will further mitigate impacts of the development. The site is located at the head of a long access road and all of the activities will be taking place far from other properties. Space for landscaping etc is not a problem.
- The site is within a cut away bog. This is already therefore a degraded landscape from which the original vegetation has been destroyed as part of the peat recovery operations that formerly took place.
- Clay and gravel for the development are both available close to the site, within the same property and at locations far removed from houses. IN effect, almost the entire preparatory works for the development can be carried out within the immediate vicinity of the proposed landfill.
- The site has been identified as one suitable from a hydrological point of view with good protection of underlying aquifers.
- The site was identified as suitable by a study of the county carried out by Fehily Timoney for Kildare County Council It was the preferred option of three shortlisted sites.

There are also some difficulties with this site. In my view, the principle are disadvantages are:

- Its impact on County Development Plan Policies regarding the flooding and amenity use of these boglands. I will return to this below.
- There are some archaeological features recorded in this area, although these would seem to have been damaged by peat extraction.
- Poor road access, though this is largely overcome by the proposed access road.

In assessing the impacts of the development, sight should not be lost of the pressing needs for such facilities. As is recognised in government policy on waste, there is an urgent need to deal with our waste by methods other than the previous, near-total reliance on landfill. However, with all the efforts to recycle, reduce etc there will still be a need for landfill sites and the need in County Kildare is urgent as witnessed by the fact that Silliot hill is already full and the Council is dependent on provision by other authorities.

7.2 Compliance with the Regional Planning Guidelines, Regional Waste Management Strategy and County Development Plan

The adopted Regional Planning Guidelines (1999) for the area have little to say on the subject of solid waste disposal. The new Draft Guidelines (2003) are more informative on this subject and the proposal generally fits in with what is proposed particularly the acceptance of the involvement of the private sector.

Concerning the County Development Plan, the proposal is in compliance with policies on waste disposal which emphasise the need for waste recovery, acceptable standards and rehabilitation (Section 2.12.2) though there is a need for further information on some of these points.

The Plan has policies on the reuse of boglands. These are of a general nature (Section 2.25) and refer to amenity use, forestry, tourist facilities etc. Given the extent of cutaway bogland that is or will be available in the county, I do not consider that the proposal is in conflict with these policies and objectives.

More specific are the Development Plan proposals for the Robertstown Countryside which refer specifically to this bog and propose flooding, water based recreational use and forestry. The planning application and the EIS make reference to the Robertstown Countryside proposals and deal with them rather dismissively. It is contended that there is no conflict. This is difficult to sustain on a site that is located within an area where there are such specific amenity objectives. The proposal, in my view, is in conflict with these objectives.

The Waste Management Strategy is also to be considered a part of the Development Plan by virtue of the provisions of Waste Management Act 1996 (S 22(10A) (as amended by Section 4 of the Waste Management (Amendment) Act 2001, Section 4). The specific policy on landfill states:

> *"The Council will provide, or arrange for the provision of, a new engineered landfill disposal site capable of accepting residual waste material generated in the County over a 20-year period. This facility will be developed as a residual site and so a transfer station will also be required."* (Item 6, P. 65)

The proposal is in conformity with that policy. The Strategy also emphases the importance of waste minimisation, recycling etc. Therefore, in reaching my view that the proposal is in conformity with the Strategy, I consider the following to be important:

- The landfill is a "residual" landfill that is it is to take waste only after a process of diversion of recyclables and organic waste.
- A composting facility is included.

The site is not to include a civic amenity facility, bring banks etc. but, given its remote location such would not be appropriate.

The proposal is in compliance with the objectives of the Waste Management Strategy and therefore in compliance with this aspect of the County Development Plan.

There is then a conflict between the non-compliance of the proposal with the parts of the development plan dealing with the Robertstown countryside and its compliance with those dealing with waste, as inserted by the Waste Management Strategy.

Nonetheless, the application might well be considered favourably. (I say "might" because there are other matters to be considered, as further information will be required before any decision is made.) The site has many advantages for a landfill as detailed above. Furthermore, there is a pressing need for the development of such facilities and these were not evident at the time the Robertstown proposals were formulated. I am aware that these have been part of the Kildare County Development Plans for many years and were, I think formulated perhaps as much as 20 years ago.

There are two routes available concerning material contravention procedures. The first is the "normal" route by way of Section 34 (6) of the Planning and Development Act 2000. The other route is under the provisions of Section 22(10B) of the Waste Management Act 1996. The latter route is the appropriate one if the development *"is consistent with the provisions (including any objectives contained therein) of, and is necessary for the proper implementation of, the waste management plan in force in relation to the authority's functional area"*. This matter will have to be clarified.

7.3 Traffic and Roads Issues

These matters have been reported upon by the Roads Section and by Fehily Timoney. I see no need for further comment.

7.4 Landscape

The site is located in a cutaway blanket bog that has been excavated for many years by Bord na Mona as a fuel source. It is far removed from public roads or other public areas and far removed from houses and general human habitation and activity. In this respect it is a particularly suitable location for a landfill.

I consider that the assessment of the visual impact of the proposal is generally accurate. Visual impacts will generally be ameliorated by distance and by the intervening hedgerows and trees in the area. The cutaway bog itself is flat so the mounding and particularly the building will have a considerable impact within the confines of the cutaway bog. So will the road which severs the bog in two and, in its 4.6km length is a very significant element of the development.

The cutaway bog might be described as a derelict industrial landscape but it is one with considerable potential. The size of this property is a rarity in Ireland and its potential for amenity or other use has been recognised in the county Development Plan and, particularly in the proposals regarding the Robertstown Countryside which refers to flooding as a lake, associated amenity use and forestry. It would not be appropriate if this potential were to be lost by ill considered proposals nibbling at the fringes of the property. For this reason I consider that the proposal requires further detail with regard to the finished status of the development and particularly with regard to the restoration of the site.

Some details have been given with regard to the landfill itself, planting of the site and flooding of the borrow pits. However, nothing has been said about the road, parking,

the buildings, weighbridges, kiosks and all the other elements of the development. This needs to be clarified.

The restoration plans need to give further attention to the need to integrate the development with the long-term plans for the property and particularly with the amenity designations and proposals contained in the County Development Plan. As I have argued above, I think there is a good case for considering permitting the development notwithstanding my view that the proposal is a material contravention of the plan. Suitable sites for landfills are hard to come by and this site was identified after a detailed study of the county and came out as the preferred site of all. However, all that can be done to integrate it into the future development and use of these cutaway bogs should be done.

7.5 Ecology

The site is a cutaway bogland that has already been drastically altered by industrial scale peat extraction over many years. It is therefore greatly altered already in its ecology. There is nothing arising from the EIS that suggests that it is an unsuitable location for such a development. Clearly there will be some impact on ecology as there always will be but in ecological terms it is difficult to see that a more suitable site could be found. The major proviso on this conclusion is that control measures are put in place in order to ensure that the development does not result in polluting discharges to ground and surface water. This has been addressed elsewhere. Modern landfills in this respect are very different from old style dumps and the proposals made as part of this development for controlling such emission should be adequate to prevent such pollution. The details of these controls are a matter for the EPA but, as far as the planning decision is concerned, I see nothing arising that suggests that a refusal of the proposal is necessitated.

7.6 Impacts on Human Beings

This subject has generally been addressed under other headings. I consider that the principle impacts upon human beings likely to arise from a development of this type are dust, noise, odour, visual impact and impacts from vermin. These in turn may have impacts such as devaluation of property.

In the case of this site, provided it is properly run, it is most unlikely that any of these impacts will be significant. The degree of separation between the site and the nearest houses is a most convincing protection against such disamenity. Given the density of housing development in rural Kildare, it is difficult to get sites that have good separation from houses. The separation available is much greater than at most such sites, indeed it is one of the most generous I have ever come across.

The other protection against harmful impacts on human beings lies in the licencing system. This development will require a licence from the EPA and the monitoring of that licence should ensure a properly run facility that will not impact on local people. It is evident from the details submitted with the application, that a modern landfill is a very different creature from the dumps of old. The care taken in the design to minimise odour, vermin, litter etc and to collect and treat leachate will all assist in minimising the facility's impact.

The proposal will of course have a positive impact in providing a facility that is urgently needed. There will always be a requirement for landfill and this is recognised by government policy. The development of such a site will provide this needed facility for the county for a period of 20 years.

8.0 RECOMMENDATION

I recommend that the following further information should be requested.

1. It is noted that the proposed development is located in part of the cutaway Bord na Mona boglands which form a very large property at this location. It is also noted that this bogland is subject to objectives in the Kildare County Development Plan (Robertstown Countryside) for flooding, water recreation use and forestry development. Please provide additional details concerning the long term restoration and proposals for this site – that is post cessation of landfilling and composting. This should in particular have regard to the following:
    a. Proposals for the access road.
    b. Proposals for the composting facility, administration building, maintenance building, weigh bridges, kiosks, gas flare compound, oil storage area etc.
    c. Details of how the long-term objectives for these lands might be integrated into the proposed landfill and composting facility.

2. In section 1.2 of the EIS, the applicant refers to the importance of regionalisation and states that the development is in accordance with this recommendation. The applicant should clarify how the provision of a landfill for County Kildare conforms to '*accepting waste from a regional base*'.

3. The Landfill Directive requires that all waste entering new facilities be pre-treated. The applicant has specified that waste acceptance procedures will be put in place to ensure that all waste entering the site is pre-treated. These procedures need to be detailed.

4. The applicant has stated that the facility will be designed and managed in accordance with BAT (Best Available Techniques) guidance notes for waste facilities. With regard to alternative biological treatment processes, the applicant has eliminated anaerobic digestion based on cost, which is not in compliance with BAT. An assessment on the alternative technologies in terms of technical and environmental issues should be provided before alternative processes can be eliminated.

5. It is unclear from the EIS as to the outcome of the consultation with statutory bodies, non-government organisations and the public. The applicant has not included any responses to the consultation process. This information is required to permit a full assessment of the impacts of the proposed development.

6. Scoping has not been included in the EIS. The applicant should provide information on the scoping process.

7. The applicant refers to a site selection process carried out for lands in its ownership in Timahoe Bog and adjoining areas (Section 1.5.2). Full details of this site selection process should be provided.

8. The EPA finalised their statutory guidelines on the content of EISs in 2002: "Guidelines on the information to be contained in Environmental Impact Statements" (EPA, 2002). The applicant should carefully check the EIS for compliance with the requirements of this publication and amending information submitted as necessary.

9. Site Design

(a) In a number of the objections, it is alleged that asbestos was buried at the site. The applicant should comment as to whether this activity was carried out in the past. If so, details should be provided on locations, types of asbestos, volumes and proposals to rectify the situation.

(b) The applicant indicates that the site will be fully restored after the completion of waste deposition (circa 20-year period). The applicant should clarify whether the restoration referred to also include for the decommissioning of the composting facility.

(c) The applicant indicates their intention to use recovered C&D waste for site roads etc. The applicant should clarify whether they intend operating a C&D materials recovery facility at the site.

(d) The applicant should clarify whether the analyses to be carried out in the on-site laboratory will also be carried out by an external accredited laboratory, with particular reference to monitoring required by a waste licence. Or is it the intention of the applicant to gain accreditation for those parameters being tested on site?

(e) The applicant indicates that water from the wheel wash will be discharged to the surface water system. In the EPA Landfill Design Manual, it is advised that water from the wheel wash should be discharged to the foul sewer or leachate collection system.

(f) The applicant should be requested to clearly demonstrate that the composting process proposed complies fully with regulation (EC) No 1774/2002 (Animal By-products Directive). This should identify when sanitation is achieved during the process (using time-temperature relationship for the entire compost pile). The applicant should also have regard to the Biological Treatment of Biowaste – 2nd draft.

(g) The applicant indicates their intention to use one loader in the composting process, i.e., for loading the pre-composting tunnels and handling the composted material. The applicant should demonstrate how they propose to avoid cross-contamination between these two products.

(h) It is stated that the leachate drainage layer will be won on-site. The EPA design manual requires this material to be non-calcareous. The applicant has not tested the gravel for this parameter, and it is noted that it is described in some trial pit logs as being limestone. In the event that the sand/gravel on site is not suitable for purpose, the applicant should indicate where this material would be sourced.

It is also noted that processed C&D waste may be used in the leachate drainage layer. The applicant should provide test results for the material to be used in the leachate drainage layer proving its conformance with the EPA specifications. All impacts associated with revision to the sourcing of this material must be re-addressed, including traffic assessment, the size of the borrow pit, landscape assessment and so on.

(i) The applicant also proposes to use sand from the borrow pit in the construction of the landfill liner (bentonite enhanced soil/sand). If the test results for the sand indicate that it is calcareous in nature, the applicant should clarify whether it will still be suitable for purpose (i.e., that it will not be compromised – due to its calcareous nature - if in contact with leachate). The applicant should indicate alternative arrangements if on-site material is deemed unsuitable. All associated impacts should be addressed in the case of either an alternative design for the liner or an alternative source for the soil/sand.

(j) The formation levels (i.e. top of BES) of the landfill will slope from 79.917 mOD to 85.75 mOD (as shown on Drawing 1131/01/473). It is noted from Table 2.4.4 that the static water level in GW5S was recorded as high as 85.7 mOD. The BES will therefore be placed at a level up to 6 m (approximately) below the water table. The applicant should provide detail on how groundwater levels will be lowered during construction, maintained during cell filling and monitored. The applicant should also confirm that hydrostatic uplift would not compromise the integrity of the liner.

(k) The applicant should confirm that the QA/QC testing described in Section 3.5.5 also refers to the BES layer (i.e., that QA/QC testing of the BES will also follow the specification set out in the EPA Landfill Design Manual).

(l) The applicant should indicate the locations of perimeter embankments, to be constructed from over 800,000 m^3 of material excavated from the landfill footprint and spoil from the borrow pits. Their location will have implications for visual impact, surface water run-off, noise attenuation and odour and dust dispersion.

(m) With regard to leachate generation, the applicant should clarify the following issues:

a. Why there is no leachate generated in 2005 (see Table 3.7.1), when 110,000 tonnes of waste will be deposited (see Table 3.4.1).
b. Provide water balance calculation sheets, including assumptions regarding all input parameters.
c. Explain the peak in leachate production in Year 2009.
d. Provide written confirmation from the sanitary authorities of the two WWTPs proposed to be used, on the acceptability of the tankered leachate.
e. Clarify whether on-site leachate treatment is proposed. Note that if the PE equivalent is greater than 10,00 then an EIS is required.

(n) The applicant should clarify whether the leachate drainage blanket extends up the side slopes of the landfill cells. A leachate drainage blanket on the side slopes is not indicated in the drawings. There is potential therefore for leachate/contaminated run-off to overtop the cell.

(o) The applicant intends to remove the temporary cap for reuse in the clay layer above the gas collection layer. This raises concerns that this material will be contaminated, and that by removing this intermediate cap, waste will be exposed giving rise to odour nuisance.

(p) The applicant should reconcile the proposed 20-year lifespan of the facility with the placement of the temporary cap on Phase 8 in Year 23 (see Table 3.11.1).

(q) The installation of all surface water management infrastructure should come first in the construction programme. The surface water management infrastructure should 'ring-fence' the construction area prior to any earthworks.

(r) The applicant proposed to install gas-monitoring wells within the landfill at 150 m intervals. This is insufficient, as gas-monitoring wells are generally required at 50 m intervals.

10. Dust

Dust monitoring is proposed at four locations around the footprint of the landfill and a further two locations adjacent to the clay borrow pit. There is potential for dust generation from other areas of the site including the access road and sand/gravel borrow pit. There are no proposals for PM_{10} monitoring. The applicant should provide revised proposals for dust monitoring.

11. Odour Assessment

The applicant should provide the following additional information:

a. The name of the meteorological station, which was used in the model and how many years of data were used?
b. Clarify if a background odour assessment was carried out and state whether it was inputted into the model.
c. Provide comment on the cumulative effect of existing background odours and odours arising from the proposed activity.
d. Clarify that the leachate holding tanks will be enclosed. If they are not, advise whether emissions from the tanks were assessed in the odour model.

12. Landfill Gas Flare Model

(a) The applicant has not fully demonstrated that emissions from the flare are in compliance with S.I. 271 of 2002. The applicant should demonstrate that the emissions are in compliance with S.I. 271 of 2002.

(b) Models such as ISCT3 or AERMOD should be used to calculate percentiles, annual and averaging concentrations. The applicant should estimate these parameters using ISCT3 or AERMOD to demonstrate compliance with Ambient Air Quality Standards Regulations (S.I. 271 of 2002).

(c) Meteorological data from the nearest synoptic station should be used. The applicant should confirm that this is the case.

13. Noise

Provide noise model assessments of the construction and operational phases of the landfill. The model should take into account the following:

a. The construction phases, providing details on the construction plant to be used in the soil excavations and transfer of materials. Detail the predicted noise levels at those locations specified in Table 2.2.3 of the EIS.
b. The increase in noise levels at the locations along the access roads due to the increased traffic volumes during the construction and operational phases.
c. The impact of the operational phase of the landfill at local sensitive areas.
d. Assess any impact of (a), (b) and (c) on background (L_{90}) noise levels at the assessment locations (i.e., assess the impact of the increase above background).
e. The models should include noise prediction contours at the locations described in Table 2.2.3 of the EIS.

14. Traffic

(a) In the event that the sand/gravel is unsuitable for use in the leachate drainage layer, an additional 140,000 m^3 of gravel will need to be imported. If this is the case, then the applicant should re-assess the impact on traffic.

(b) The traffic impact assessment assumes a split in traffic of 2/3 to the south and 1/3 to the north. The applicant should 'stress test' this assessment using worse case scenarios, such as all the traffic coming from each direction (notwithstanding waste collected locally going directly to the landfill). The applicant should be aware that the transfer station at Silliot Hill is licensed for three years only (May 2003 to May 2005), unless otherwise agreed with the EPA.

(c) The applicant should clearly identify the proposed route to the facility from the south, and state the assumptions used in selecting this route, having regard to the proposed ring road for Naas.

(d) There are a number of 'pinch-points' along the access roads proposed for the development, as shown in Appendix G-I. These include towns, canal bridges, railway bridges and river bridges. Some of these locations have single lane traffic, weight restrictions and steep gradients. The applicant should assess the impact of increased HCV traffic at these locations and propose suitable mitigation measures or alternatives.

(e) The applicant assesses the impact of the development on existing traffic volumes. The assessment should be expanded to take account of future traffic volumes using these routes – i.e., the cumulative impact of landfill traffic and the predicted traffic increases on these routes from other developments.

(f) The applicant should demonstrate that the sight lines provided at the site entrance are adequate.

(g) The applicant should clearly illustrate the proposed new road alignment at the site entrance, showing the turning lane, new lane alignment and grass verges.

15. Geology

(a) The applicant has identified a clay-filled 'weather-out valley' feature within the site, with a depth-to-bedrock of over 100 m. Three mineral exploration boreholes to the northwest of the proposed development define a second area with depth- to-bedrock in the order of 53 m. The applicant should comment on how this feature might relate to the one found beneath the site and the possibility of these representing a buried karst landscape. Does the presence of a second feature, (of possible karst origin), alter the interpretation of the geophysical survey results.

(b) On page 62 of the EIS the applicant states that the geophysical survey ... *'did not find any evidence of high permeability zones within the bedrock'*. On page 3 of the geophysical survey report (provided as Appendix C-V), it is recommended that the *'significance of this dolomitisation in terms of increase bedrock permeability should be investigated'*. The applicant should indicate what, if any, work was carried out to investigate the increased secondary permeability as described in the geophysical report, and also to explain these apparently contradictory statements.

(c) The applicant defines the area of the borrow pit with nine trial pits; TP7, TP29 to TP34, TP36 and TP37. The logs describe peat (and silty clay) overlying this material with a (combined) thickness of between 1.6 m and 3.6 m. The applicant should quantify the volume of this material and provide specific provisions on its disposal/use.

(d) There are two large borrow sources proposed, each of a size that would require a statutory EIS. Some of the environmental impacts of this infrastructure are addressed. Both will be approximately 6 m deep, so dewatering is proposed. The amount of dewatering necessary is not assessed. This will have implications for the receiving surface waters (sizing of settling ponds) and affects on the local hydrogeology, and so the applicant should carry out this assessment.

(e) The use of Bentonite Enhanced Soil (BES) is proposed. The applicant cites two permeabilities for this material in Section 4.3 – 1×10^{-9} and 1×10^{-11} m/sec. The applicant should clarify which permeability is correct, and also to indicate which was used in the leakage calculations. Calculations should be redone, if necessary. Regardless, calculations should be verified and provided to the Council.

(f) The mitigation measures for geology describe a phasing of the excavation works. The only phasing plan provided is for the development of the landfill cells/phases. The applicant should provide a phasing and material balance for the borrow pits.

16. Hydrogeology

(a) The applicant should provide greater explanation for the pump test. There are a number of inconsistencies between the discussion of the pump test in the EIS and the graphs provided in the appendices. For example, a maximum pumping rate of 43.6 m^3/day is cited in the EIS, but the graphs show a pumping rate of 56 m^3/day for a period of the test. The recovery period of the test is not provided. This can often be the most useful part of the test, as it is unaffected by variations in pumping rate. The applicant should provide recovery data/graphs, all calculation sheets for transmissivity and other aquifer characteristics, distance-drawdown curves and interpretative report. If recovery information was not recorded, the applicant should redo the pump test in order to ascertain the aquifer characteristic with greater certainty.

(b) During the pumping test, a drawdown of 0.6 m was noted in an overburden well. The applicant should comment on the interconnection between the bedrock and overburden groundwater, and how the drawdown seen in the overburden reconciles with the low permeability nature of this material (as cited in the EIS). Does this interconnection affect the interpretation of contaminant transport and leakage calculations? All leakage calculations and aquifer throughput calculations should be provided.

(c) The applicant indicates that there are no zones of high permeability in the bedrock. However, FTC carried out a short-term pump test at the site, which indicates greater aquifer potential then that cited in the EIS. The applicant should clarify whether the FTC pump test results change the site assessment, site design considerations or site suitability in terms of the groundwater resource protection matrix. This should have regard to the dolomitisation described in the geophysical report.

(d) The site is underlain, for the most part by Waulsortian Limestone. With reference to Appendix C-VIII, the aquifer classification for this formation is not provided. In Section 2.4.7 of the EIS, the applicant uses an aquifer classification of LI in the groundwater protection response matrix. The applicant should confirm that this is the correct aquifer classification for the Waulsortian Limestone and provide supporting documents from the Geological Survey of Ireland. If it is found to be other than L1, then the applicant should be requested to re-assess this section, and any related section, of the EIS. This re-assessment should have regard to the possibility of high permeability zones as identified in the geophysical survey report.

(e) The applicant should assess vertical groundwater gradients.

(f) The applicant should provide calculations giving the estimated volume of groundwater that will be pumped from the two borrow pits and landfill footprint and demonstrate that this volume of additional water can be adequately accommodated in the settling ponds, and receiving water.

(g) With regard to the environmental monitoring of groundwater, the applicant proposes four downgradient monitoring wells (GW2D, GW2S, GW3D and GW3S). These are two sets of well pairs. For this size and type of facility, two locations are not sufficient. With reference to Figure 2.4.7, it is questionable whether either bedrock location is downgradient of the landfill with respect to groundwater flow direction. Groundwater monitoring wells should be located closer to the landfill so as to act as an early warning in the event of leakage to the aquifer. The proposed locations are approximately 800 m and 1,200 m from the landfill footprint. Furthermore, any reduction in monitoring should only be considered if there is no evidence of groundwater pollution; it should not be contingent on the closure of the landfill. The applicant does not provide proposals for the water level monitoring during de-watering operations required to install the BES. The applicant should provide revised proposals for groundwater monitoring. Monitoring of the proposed water supply well should also be considered.

17. Surface Water

(a) The surface water settling ponds will be required to settle fines from surface water run-off from the site, and dewatering operations at the two borrow pits and the landfill. There are no calculations provided showing how these ponds were sized, or the proposed swales/drains. The applicant should provide these calculations detailing all assumptions and design inputs, and indicating what size particles the ponds will settle.

(b) It is noted from the objections submitted that flooding of lands downstream of the site occurred in the past. The cause of this flooding is being attributed to the silting of drains from peat harvesting activities. The applicant should comment on this allegation and also confirm that the receiving drains have capacity to handle increased flows from the site without causing flooding of neighbouring properties.

(c) Prior to any development starting at the site the applicant must submit details of surface water control at the site. This should address the proposed diversion of existing drains, drainage from the site access road, etc. It should include details on sizing drains and ponds and drawings showing all surface water infrastructures. This infrastructure should be put in place prior to any works starting at the site.

(d) The applicant should be requested to submit details on the location and method of construction of settling ponds. It is indicated that they will be lined. The applicant should confirm that hydrostatic uplift would not compromise the integrity of the ponds.

(e) It appears that the applicant has not conducted any additional physo-chemical baseline monitoring at the site. The applicant should determine the impact of the existing site on the receiving water.

(f) The applicant should provide details or how they intend to improve the existing surface water quality at the facility. Based on Q-values included in the EIS the site is causing serious water pollution. The applicant must take account of the Water Framework Directive requiring good ecological status to be achieved and maintained for waters.

(g) The applicant should carry out an assimilative capacity study for the receiving water. This will permit the determination of discharge limits for the surface water discharge.

(h) The applicant should install a hydrometric gauging station upstream of the surface water discharge on the receiving water.

(i) The applicant should submit a drawing/figure showing the location of all environmental monitoring locations at the site.

(j) The impact of flash floods on the surface water management system requires clarification.

(k) A grab sample taken on the 04-02-2003 is not sufficient to establish the baseline conditions in receiving waters. This exercise should have been conducted over a minimum of three months employing a flow proportional auto-sampler. Alternatively the applicant should conduct weekly monitoring.

(l) A further explanation is required as to the elevated phosphate, faecal coloforms, pH and Total hardness in the samples taken on the 04-02-2003

18-21 Items 1-4 of report of Environmental Health Officer of 15/4/04.

22-25 Items 1-4 of Roads Report of 15/4/04.

26-33 Items 3-10 of Area Engineers report of 24/3/04. (Note: Items 1 and 2 do not constitute further information.

34-35 As per items 1 and 2 of Fire Officers report of 15/04/04.

Stephen Dowds BA MRUP MIPI

15th April 2004