

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER 138-1

APPLICANT: Castle Contracts (Ireland) Ltd.

FACILITY: 'Russborough Landfill', Russborough, Blessington, Co. Wicklow

Recommendation: That a licence be refused

(1) Introduction

Castle Contracts (Ireland) Ltd have applied to operate an inert landfill in an old worked out sand and gravel pit (operated during early 1970s) located in the townland of Russborough Co. Wicklow for the disposal of construction, demolition and quarrying wastes. The applicant proposes to use the natural clay soils in the vicinity to form the basal liner and capping layers.

The site lies approximately 4 km south of Blessington village, in a rural area where forestry, agriculture, and quarrying are practised. A large active sand and gravel quarry operated by Tracey Enterprises Ltd is situated on the opposite side of the N81. The only residence in the immediate vicinity lies 10m from the south-western corner of the site. The site is bounded between the west shore of the Pollaphuca Reservoir and the main N81 Blessington Road.

The pit is rectangular in shape and has the appearance of a sunken sports pitch from the N81 road (there is a 6m drop from the road) with dimensions of 140m x 320m and an area of approximately 4.5 hectares. A lakeshore bank with trees separates the pit from the Pollaphuca Reservoir.

Notwithstanding former use, the entire worked out pit has been classed as an pNHA No. 731 (proposed Natural Heritage Area) by Dúchas due to its varied moss and rush cover, temporary lake, and annual plants. Furthermore the east facing boundary of the pit (tree bank and lake shore) is shared with SPA No. 063 (Poulaphuca Reservoir), a Special Protection Area designated under the 1979 Birds Directive, in 1996. Overall ecologically, the site is a unique example of the natural regeneration of a quarry.

The applicant has applied to landfill inert waste (Class 1 - Third Schedule) in a specially engineered landfill (Class 5 - Third Schedule). Other classes applied for are Class 4 of the Fourth Schedule regarding recovery of inert material.

The proposed facility was granted planning permission for this development by Wicklow County Council on the 17th May 2001.

A plan showing the location of the facility to which the application relates is provided in Appendix 1.

Site Visits:

DATE	PURPOSE	PERSONNEL
20 June 2000	Site Notice Check	D. Shannon
28 February 2002	Site Visit	M. Doak

General Information:

Quantity of Waste (tpa)	125,000 tonnes per annum
EIS Required	Yes, in compliance with the Regulations
Date of Application	11 April 2000
Number of Submissions received	6

(2) Waste Types, Quantities & Infrastructure

The total volume of inert waste applied for at the facility is the emplacement of 270,000m³ or 380,000 tonnes, in eight cells (70m x 60m) over 3 years. Table E 2.1 of the Application specifies an annual figure of 125,000 tonnes. The Applicant states in the Environmental Management Plan (EMP) which accompanies the Application that all waste will be brought to the facility by the Licensee/Operator and considers 'there is no requirement for a weighbridge at the site'. The applicant has not proposed to install a weighbridge or waste inspection or quarantine area.

It is proposed that 'only inert or inactive waste will be accepted' at the landfill. The Application states (see Section 4.2 EMP): 'all waste materials will be brought directly by HGV drivers to the edge of the active fill cell, where they will be inspected briefly, prior to discharge, by the site foreman'. That is the total text in the application for waste acceptance. No attempt has been made by the applicant to state how the facility will meet the requirements of the Landfill Directive in characterising the waste by: (a) basic characterisation, (b) compliance testing, and (c) on-site verification. The EMP (Section 4.1) lists the types of C&D waste to be accepted:

- Natural Soil
- Stone, Cobbles, Boulders
- Topsoil
- Brick/Mortar
- Concrete (unreinforced)
- Pottery and China
- Asphalt, tar and tar products

However, the proposed waste types to be taken at the facility do not meet the requirements of 'inert waste' as per Article 2 (e) of the Landfill Directive. In particular the applicant wishes to accept asphalt, tar and tar products.

Limited historic landfilling of predominantly inert material was previously undertaken in 1996 without planning permission. There is little information on this aspect other than an estimated 30,000 tonnes of inert fill materials lie in the south-western corner of the site. The origin of the material 'comprised natural soil and stone sourced from basement excavations in central Dublin'. The applicant proposes to excavate this material and replace it at the opposite (northern) end of the site into Cells 1 and 2.

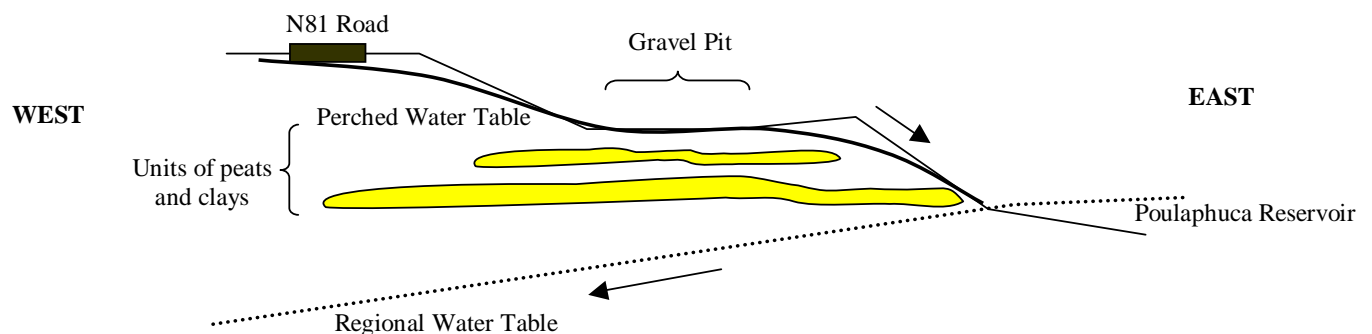
(3) Emissions to Air

Potential emissions to air would mainly be as dust. Limited mitigation measures have been proposed by the applicant as regards dust and additional dust control measures would have to be required if a licence were granted.

(4) Emissions to Groundwater

The site and vicinity is dominated by a glacial geology where there are thick deposits of sands, gravels and local units of peats and clays. Such deposits are coincident with a former glacial outwash area. The underlying regional bedrock geology comprises Ordovician shales. The depth to bedrock on site is over 24m deep. No wells lie within a 1km radius of the facility; all local houses are on mains supply.

The applicant has provided a detailed compilation report on the hydrogeology of the pit and the interaction of the adjacent Poulaphuca reservoir (200m east), with a review of a topographical survey carried out in March 1997. The reservoir was formed by the construction of a dam at Poulaphuca in the 1940s which raised water levels in the River Liffey causing the river to burst its banks and form a large lake. As a result there is a certain amount of leakage into the surrounding sand/gravel deposits. Topographically the pit floor and pit pond (189.6mOD) lie 3.3m higher than the water level in the Poulaphuca reservoir (186.3mOD). Hydrogeologically the pit floor is underlain by two gravel aquifers – a local perched groundwater body resting on the clayey peats, and a deeper regional groundwater body to which the Poulaphuca reservoir slowly leaks. The perched watertable is actually coincident with the seasonal pond at the pit floor (189.6mOD), and the deeper watertable lies at an elevation of c.177mOD. The above may be visualised in the schematic diagram below:



The applicant describes that all arising leachate or drainage from the pit/proposed landfill will runoff to the deeper groundwater table and hence flow away from the reservoir, westwards. However, I disagree with this. No assessment has been provided on the aspects of the shallow perched groundwater body which flows east to the reservoir, and would drain part or all of the gravel pit. This issue is further developed in Section 9 of this report.

No leachate collection or holding system is envisaged by the applicant. Any recharge or run-off from each cell will be directed via a granular base layer which rests on the clay liner to a line of gravel soils on the western side of the landfill. Additional leachate measures would have to be required if a licence were granted. It is envisaged that a 'Puraflo' waste water treatment unit be installed to treat sewage from staff accommodation. It is not clear as to where wheel wash effluent is to be discharged to.

(5) Emissions to Surface Waters

In the short-term the applicant has stated that there would be no emissions to surface waters since all water in the vicinity drains directly into ground (permeable gravels) or will flow to the seasonal pond (perched groundwater body) at the centre of the pit floor. In the long-term this flow direction would change following the clay lining and capping of the proposed landfill. 'Most rainwater falling at the site will therefore run-off eastwards across the site, directly into the reservoir'. The applicant has not considered anything further on this aspect. Additional measures would have to be required if a licence were granted.

(6) Other Significant Environmental Impacts of the Development

The applicant provided a detailed ecological report as part of the EIS and included a summary of the 1994 field notes of the National Parks and Wildlife Service designating the quarry an ASI. However the Agency was not provided with the natural heritage status of the area particularly with regard to the pNHA No. 731 and SPA No. 063 designation. These designations were only alerted to the Agency by Duchas (submission no's 1 [14/6/00], 3 [23/8/01], 5 [22/11/01], and 6 [22/11/01]). Issues arising from the site's pNHA and SAC status are not discussed in any section of the application.

The applicant in Attachment H.4 of the application (Environmental Impacts and Mitigation Measures) considers that much of the ecology (seasonal pond/wetland, pastureland (sic.)) will disappear from the site due to the placement of inert materials as landfill. They argue that this can be done since 'the floral and faunal diversity of the wetland area (pit floor) is quite low, due to heavy grazing by both sheep and animal...There is ample similar habitat in the area to accommodate any disturbed or displaced speciesprovision has been made for a replacement wetland adjacent to the northern site boundary.

(7) Waste Management, Air Quality and Water Quality Plans

The applicant has not produced any type of discussion as regards the above plans.

I have reviewed the Waste Management Plan for County Wicklow 2000 - 2004. There is no mention of a C&D waste facility at Russborough in the plan. Furthermore the plan states that it is the general policy of Wicklow Co. Co. that all C&D waste should be recycled rather than landfilled. Any future planning permissions regarding inert landfills must show that a certain percentage of the inert waste incoming be recycled rather than landfilled.

(8) Submissions

6 individual submissions were received in relation to this application and I have had regard to the submissions in making my recommendation to the Board.

A refusal of the application for the waste licence will resolve all those issues relating to the proposed facility which were raised in the submissions.

Of the six submissions, four are from the same body (Duchas). The others are dealt with separately below:

Submission No.1, 3, 5, & 6 - Duchas

- *The proposed development is within pNHA 731 and has not been addressed in the EIA*
- *The site is adjacent to the SPA No. 63 of the Poulaphuca Reservoir Special Protection Area.*
- *The possible disturbance to wildfowl and gulls by machinery and noise generated has not been addressed in the EIA.*
- *There is a burial ground mentioned in the pNHA map which has not been addressed in the EIA.*

Submission No. 2 – Dublin Corporation

- *The proximity of the septic tank and percolation area to the Poulaphuca Reservoir*
- *The proximity of the landfill facility to the Poulaphuca Reservoir*
- *The risk of pollution to groundwater in the area.*

Submission No. 4 – South Western Area Health Board

- *The site must comply with the guidance contained in the EPA Landfill Manuals*
- *Roads within the site must be adequately surfaced to prevent dust*
- *Noise Regulations must apply*
- *There should be no public health nuisance to people in the vicinity*
- *Quality of drinking water must not be threatened.*

(9) Recommendations

Section 5 (1) of the WMA 1996 describes environmental pollution as follows: “environmental pollution means, in relation to waste, the holding, transport, recovery or disposal of waste in a manner which would, to a significant extent, endanger human health or harm the environment, and in particular:

(a) Create a risk to waters, the atmosphere, land soil, plants or animals,

(b) Create a nuisance through noise, odours or litter, or

(c) Adversely affect the countryside or places of special interest.

Section 40(4)(b) provides, *inter alia*, that a waste licence shall not be granted unless the activity concerned, carried out in accordance with such conditions as may be attached to the licence, will not cause environmental pollution. The following would constitute environmental pollution at the proposed inert landfill site:

- i. It is apparent that the applicant has been minimalist in the information submitted in relation to the site status as per the Wildlife Act and the Birds Directive. Such plans would adversely affect the pNHA and SAC.
- ii. The proposed landfill facility and sewage treatment percolation area lie within 200m of the Poulaphuca Reservoir. The applicant provides much detail on the dynamics of the deeper groundwater flow in the regional aquifer and considers that any drainage/leachate arising on the pit floor from landfilling will ultimately enter the regional water table and hence flow away from the reservoir. However I consider that the applicant does not assess the risk of groundwater pollution of the shallower perched aquifer which will flow east to the reservoir. It is possible that some, if not all, of the arising leachate and/or sewage treatment effluent (from the proposed percolation area) would enter the perched aquifer first and thereby flow to the reservoir which is used by Dublin Corporation for drinking water purposes.
- iii. The applicant does not meet the requirements of the Landfill Directive (1999/31/EC) which became law in Ireland on 16 July 2001, particularly with regard to the necessary landfill lining (base and sides) and geological barrier requirements or leachate collection aspects as per Annex 1 for inert waste landfills. The applicant intends only to place a '0.5m thick relatively impermeable clay liner at the base of the landfill' and emplace clay sides during filling. However, the Landfill Directive specifies that the thickness requirement is 1m clay for both base and sides. The applicant limits leachate collection to the installation of a granular drainage blanket over the clay liner which will fall towards and drain into the natural gravel soils on the west side. In reality leachate will not be collected, instead all drainage arising from the landfill would percolate unchecked into the gravels direct to the underlying perched watertable.

- iv. The proposed waste acceptance criteria and procedures envisaged by the applicant do not meet the requirements of Annex II of the Landfill Directive.

I recommend that all the above activities, for which the applicant has applied for a waste licence, be refused for the following reasons:

I consider that any landfilling of inert waste at the facility would not comply with the requirements of Section 40(4) of the Waste Management Act, 1996. In coming to this recommendation I have had regard to the following matters:

1. that the disposal activity (Class 1 - 3rd Schedule) applied for would cause environmental pollution as it will interfere with the countryside or places of special interest and in particular would adversely affect the Duchas designated pNHA No 731 and SPA No 063;
2. the likelihood of contamination of the underlying shallow groundwater from leachate and hence the possible pollution of the Poulaphuca Reservoir;
3. the landfill proposal does not meet the requirements of the Landfill Directive.

Signed _____

Dated:

Mr Malcolm Doak
Inspector, Environmental Management & Planning.

APPENDIX 1

MAP OF LOCATION