

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER

110-1

(1) Summary:

The proposed facility is a specially engineered landfill which is being developed by Peat Ash Ltd. (subsidiary company of ESB) for the deposition of pond ash from the ash ponds at the ESB power station in Shannonbridge, Co.Offaly. The proposed landfill facility is currently being developed for peat extraction by Bord na Mona in a large, partly cutaway, bogland area at Cloniffeen, Co. Offaly and is 1.5km from the power station. The current ash ponds at the Shannonbridge power station have been in service since 1982. It is proposed to move ash from the existing ponds at the power station to the proposed landfill site to free up sufficient space to hold the future ash output generated at the station.

The applicant intends to landfill an average of 95,000 tonnes of pond ash per annum and when weather conditions permit, this may increase to a maximum of 100,000 tonnes per annum. The total volume of pond ash to be landfilled is 650,000 tonnes between 2000 and 2008.

| | |
|------------------------------------------------|-------------------------------------------------------------|
| Name of Applicant | Peat Ash Limited |
| Facility Name (s) | Peat Ash Disposal at Cloniffeen, Co. Offaly |
| Quantity of waste (tpa) | 100,000 (max.) |
| Environmental Impact Statement Required | Yes |
| Number of Submissions Received | 1 |
| Inspector's Recommendation | The proposed decision as submitted to the Board be approved |

SITE VISITS:

| DATE | PURPOSE | PERSONNEL | OBSERVATIONS |
|----------|-------------------|-----------|----------------------------------|
| 24/09/99 | Check Site Notice | P. Carey | Site Notice complies with Art. 8 |
| 29/05/00 | Site visit | M. Henry | |

(2) Activity Summary

The facility will only accept non-hazardous pond ash from the nearby Shannonbridge power station. The total proposed disposal area is 18.38 hectares of which the ash piles will occupy approximately 12 hectares. The ash will be deposited in seven separate cells and only one cell will be active each year for five months during the summer /autumn period, weather permitting. When each cell is completed, it will be capped with peat and revegetated.

(3) Facility Location

A location plan showing the outline of the site to which the application relates is provided in **Appendix 1**. The plan also shows the layout of the facility.

The pond ash will be transported from the power station in trucks using the power station and Bord na Mona access roads and travelling along the Shannonbridge to Cloghan road (R357) for a distance of approximately 150m before entering the proposed landfill. A new access road will lead from the R357 to the entrance of the proposed site. The nearest occupied dwelling is located opposite the landfill site off the R357, approximately 100m from the site boundary. It is assumed that 5 trucks will make 8 trips each per day (equivalent to 40 round trips or 80 vehicle movements per day).

(4) Waste Types and Quantities

The total quantities and types of wastes accepted by the facility are shown below.

| YEAR | NON-HAZARDOUS WASTE (tpa) | HAZARDOUS WASTE (tpa) | TOTAL QUANTITY OF WASTE (tpa) |
|--------------|---------------------------|-----------------------|-------------------------------|
| 2000 to 2008 | 650,000 | Not Applicable | 650,000 |

(5) Facility Design

- **Facility Development**

Condition 4.1 of the proposed decision requires the establishment of all infrastructure prior to the commencement of the licensed activity unless otherwise instructed by the Agency.

- **Infrastructure**

Site security: Condition 4.3.1 of the proposed decision requires the provision of security gates and pallisade fencing at the entrance to the facility and security fence along the access roads. Wooden post and chain-link fencing shall be provided around the perimeter of the site.

Wheelwash: A wheelwash will be constructed at the facility (Condition 4.9) and all waste delivering vehicles will be required to drive through the wheelwash before exiting the site.

Weighbridge: It is not considered necessary to require the installation of a weighbridge at the facility. Vehicles delivering pond ash will be weighed at the Shannonbridge power station prior to transporting the material to the proposed landfill.

Sewerage: A portable toilet system is planned for this facility.

Site accommodation: A small portocabin type building is to be located near the site entrance.

- **Liner System**

The proposed landfill is for the disposal of pond ash from the existing ash ponds at the Shannonbridge power station. The pond ash is the material remaining after the fly ash/bottom ash (from the combustion of peat) is mixed with water, allowed to settle and the supernatant pumped away. Peat fly ash (EWC 100103) and bottom ash (EWC 100101) are not hazardous wastes as listed in the hazardous waste list (Council Decision 94/904/EC). It is proposed to classify this facility as a non-hazardous landfill as opposed to an inert landfill

as the results of toxicity testing on the ash eluate show elevated toxicity values. Therefore, the licensee is required to line the landfill and leachate lagoon to the non-hazardous landfill standards specified in the Landfill Directive (1999/31/EC).

- ***Leachate Management***

The applicant is required to install a leachate management system and this shall include the provision of a leachate collection system, a leachate lagoon and leachate monitoring points.

- ***Capping System***

The applicant proposes that, after the end of each season's ash transfer and the completion of the individual cells, a layer of peat will be mixed into the ash surface to reduce surface pH and facilitate revegetation of the ash. It is envisaged that this peat could be sourced from within the boundary of the site. Condition 8.1 of the proposed decision requires the applicant to submit full details on the restoration of the facility and the capping materials to be used.

(6) Facility Operation/Management

- **Waste Acceptance/Handling Procedures**

Condition 5.2 of the proposed decision specifies that only pond ash may be accepted at the facility. As no other waste will be accepted at the facility, a dedicated waste inspection/waste quarantine area is not required. Condition 3.10 specifies that a record must be maintained for each load of waste arriving at the site. Detailed waste acceptance procedures are required to be developed prior to the commencement of the activity (Condition 5.4).

- **Hours of Waste Acceptance**

Pond ash waste may only be accepted at the facility between the hours of 8.00 and 06.00pm Monday to Friday unless otherwise agreed with the Agency. The disposal of the pond ash will occur over a five month period from mid-May to mid-October.

(7) Restoration and Aftercare

The facility is intended to have a lifespan of approximately 8 years. A restoration and aftercare plan for the facility is required under Condition 8.1 and this is required to take into account capping, restoration and landscaping of the facility upon completion.

(8) Emissions to Groundwater

The site is underlain by the Holkerian to Brigantian Basinal limestones, also known as Calp limestones. The groundwater within the bedrock has been identified as falling within the GSI resource protection zone of LI/M which indicates a minor aquifer of local importance that is productive only in local zones and is moderately vulnerable to contaminant ingress. It is considered that the large scale groundwater flow is in a south westerly direction towards the River Shannon. However, within the site the groundwater flow regime may be more complex due to the peat bog geometry and the presence of local drainage channels.

Monitoring of the groundwater beneath and in the vicinity of the proposed site showed evidence of elevated ammonia levels. It is likely that the source of this ammonia may be from peat deposits. Groundwater monitoring is to be undertaken as specified in Schedule E. The applicant identified one borehole within 500m of the site and this has been deemed unfit for human consumption because of high iron levels. The applicant proposed to extend the mains supply to this house and Condition 9.2 makes provision for this. A borehole for a

local water scheme is located at the Curraghmore pumphouse approximately 1.1km upgradient of the site and the proposed development will have no impact on this source.

(9) Emissions to Air

Odour: The ash does not have a discernible odour and will not be a source of odour nuisance.

Dust: The pond ash, which has a typical moisture content of 50%, is unlikely to be a source of dust nuisance. Ambient baseline dust monitoring undertaken as part of the application indicated dust deposition levels ranging from 25 to 131mg/m²/d at the site boundary. The applicant is obliged to comply with (i) Condition 6.6 of the proposed decision in relation to nuisances and (ii) a dust deposition limit of 350mg/m²/d at dust sensitive locations. In addition, during periods of dry weather, Condition 6.5.1 requires the applicant to use water as a means of minimising airborne dust nuisance.

Landfill gas: The ash to be landfilled is a non-hazardous product of peat production and as such is unlikely to be a significant source of landfill gas.

(10) Noise Emissions

The proposed decision will limit the company to daytime 55 L_{eq}dBA and night-time 45 L_{eq}dBA at noise sensitive locations in addition to carrying out a noise survey of the site operations every year. Activities will be limited to between the hours of 08.00 am and 6.00 pm and the proposed decision requires the applicant to submit proposals for the construction of a screening embankment along the boundary of the facility which should further minimise noise emissions at noise sensitive locations.

(11) Emissions to Sewer

There will be no emissions to sewer from this facility.

(12) Emissions to Surface Water

The principal emission to the Curraghmore Outfall will arise from the discharge of leachate from the leachate storage lagoon/treatment system. Leachate, as well as surface water run-off from the active cells is required to be collected in a leachate lagoon. The results of analysis conducted on the pond ash eluate confirmed high pH (12.4 pH units) and also elevated toxicity results (15 min. EC₅₀ of 91 Tu for *Vibrio fischerii*; 48 hr. EC₅₀ of 12.3 Tu for *Daphnia magna*). The proposed decision (Table F.3) sets emission limit values for pH of 6-9 pH units while the leachate discharge will also have to comply with a toxicity limit of 5 Toxic units. The 95%ile flow in the Curraghmore Outfall is low and has been given by the applicant as 0.01m³/s. The periods during which emissions of leachate to the Curraghmore Outfall can take place are limited to when there are greater than 100 dilution available in the receiving water. This is set having regard to the general practice of requiring 20 dilutions for each Toxic unit for the protection of the receiving water body. In the event that the discharge of leachate to the Curraghmore Outfall cannot take place, then the applicant will have to examine alternative options (leachate recirculation, tankering off-site) which shall require the prior agreement of the Agency.

Surface water run-off from areas outside the active ash disposal areas (but within the facility boundary) will also discharge to the Curraghmore Outfall. The proposed decision requires the applicant to close off/divert surface water from the surrounding peatlands so

that surface water ingress into the ash disposal areas are minimised (Condition 4.14.1). In addition, the control and collection of surface water is provided for as a specified engineering work. Table F.4 of the proposed decision specifies a suspended solids emission limit value of 35mg/l for surface water run-off from outside the active ash disposal areas and this limit is in line with that specified in peat harvesting licences issued by the Agency. The applicant is required to monitor both the leachate and surface water discharges in accordance with the monitoring requirements specified in Table E.3.1.

(13) Other Significant Environmental Impacts of the Development

The River Shannon Callows have been designated an SPA under the Birds Directive (79/409/EEC) and are also proposed for designation as an NHA. The area covered by the Shannon Callows does not extend up to the proposed landfill site and no impacts on this SPA/proposed NHA are envisaged.

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

The Waste Management Strategy for the Midlands Region was published in April 1999. It makes reference to *the peat burning power stations producing a peat fly ash residue from the combustion process which has up to now been managed in lagoons close to the generation plant. It states that the ESB are seeking to find alternative management systems for this waste.* The Environmental Impact Statement examined a number of alternatives options for the pond ash including its use in agriculture, as a sewage sludge stabiliser and as landfill cover material. However, the options studied were not considered justified at present. The proposed landfill at Clonifeen will allow pond ash to be moved from the existing ash ponds at the Shannonbridge power station in order to free up sufficient space for the future ash output of the station. Under the conditions of the proposed decision, this landfill will required to be a lined engineered site with strict environmental controls. The Water Quality Management Plan for the Upper Shannon Catchment proposes certain water quality standards for this catchment. The Curraghmore Outfall, which flows into the River Shannon near the Shannonbridge power station, is required to be monitored both upstream and downstream of the facility as part of the proposed decision. In the event that leachate will be discharged from this facility, such discharges will have to comply with the emission limit values specified in the proposed decision.

(15) Submissions/Complaints

One submission was received from Mr. John Joe Ryan on 18/11/99 relating to the application. The main concerns were as follows: the site is not in keeping with natural surroundings, the site will disturb the natural habitat of the surrounding area, animal & bird life, ash, dust and unpleasant smell etc., noise pollution from trucks and machinery, pollution of existing water supplies with heavy metals and other constituents, safety volume of traffic on this road will be seriously interrupted during peak tourist season.

The proposed disposal site is part of a cutaway bog which is currently being used by Bord na Mona for production and storage of milled peat. The site is sparsely vegetated and the surrounding area consists of bogland and mixed farmland. It is envisaged that the cells will

be capped with peat and revegetated upon completion to integrate into the surrounding landscape. The applicant is required to submit details on the proposed restoration and landscaping of the facility as part of Condition 8.1 of the proposed decision. Compliance with Condition 6 of the proposed decision will ensure that nuisances will not arise from the licensed activity while the proposed decision also specifies emission limit values for noise, dust and emissions to surface water. The applicant will be required to line the landfill and install a leachate management system and this should ensure adequate protection of all groundwaters at or in the vicinity of the site. In relation to traffic, the estimated increase in vehicle movements along the short section of the R357 (approximately 150m) will be 80 journeys per day for 5 months of the year. Although this will approximately double the lorry traffic and increase the overall vehicle movements by approximately 10%, it is concluded that this will not have a significant impact on traffic flow or lead to traffic congestion along this 150m stretch of road. Appropriate warning signs will be erected on the access road from the site and at other locations.

Signed _____

Dated:

Dr. Michael Henry
Inspector, Environmental Management & Planning

APPENDIX 1
LOCATION MAP & LAYOUT PLAN

**APPENDIX 2
SUBMISSIONS**