APPENDIX 4

Report on Extent of Capping and Landfilling

Extent of Capping and Landfilling at *greenstar* Fassaroe

Introduction

Condition 4.4.1 of EPA Waste Licence Register No. 53-2 states:

"Within four months of the date of grant of this licence, the licensee shall submit a report on the extent of capping and landfilling at the site. This report shall include details on (i) waste types previously landfilled at the site, (ii) the areas landfilled, (iii) the areas that have been restored, (iv) the type of capping employed, (v) the condition of the restored areas and (vi) recommendations on final capping to be installed. Any recommendations arising from this report and a timetable for implementation shall be agreed with the Agency and implemented."

The following report provides details on each of the above sections. Further details are provided in Appendix A, environmental monitoring data, and in Appendix B, drawings indicating previously landfilled areas and development works at the facility.

(i) Waste Types previously landfilled

On the 24th November 2000 greenstar (formerly Celtic Waste) acquired the Fassaroe facility. Landfill activities ceased immediately after the acquisition. The Fassaroe facility operated as both a quarry and landfill site between 1947 and 2000. For many years, sand and gravel was excavated at the quarry and transported to construction sites. Trucks returning from deliveries, brought with them construction and demolition waste for disposal at the facility. Thus, quarrying and landfilling of construction and demolition waste occurred simultaneously. From the period 1947 to 1995 records were not kept of the waste types nor of the quantities accepted at the Facility.

Since 1995 approximately 350,000 tonnes of inert waste material has been deposited at the facility. Most of this material was deposited at the beginning of this period to provide a base on which to construct the present waste transfer building. The quantity of inert waste subsequently decreased to approximately 40,000 tonnes per annum until the end of 2000 when landfilling activities ceased.

Environmental monitoring undertaken at the facility over the past 3 years (see extracts from the Facility's Annual Environmental Reports for 2001 and 2002 contained within Appendix A) and inspection of previously landfilled areas indicate that the facility has negligible impact on its surrounding environment and poses a minimal threat in the future. The monitoring data supports anecdotal evidence that construction and demolition waste, comprised principally of subsoil and stone, was landfilled at the facility historically. As one would expect from this waste, which is predominantly inert, environmental monitoring indicates that little or no degradation of organic matter is occurring within previously landfilled areas. There is no spoiling of the extensive sideslopes by fugitive emissions of leachate, and landfill gas, surface water and groundwater monitoring indicate that the landfill has negligible impact on its environs.

(ii) The areas landfilled

It is not possible to accurately define previously landfilled areas because a pre-deposition topographic survey of the facility was never undertaken. Hence, most areas within the facility boundary other than those that follow the ground contours of neighbouring lands and appear to be original ground level (the river area and immediate surrounds and the eastern boundary etc.) are indicated as having been landfilled.

The areas suspected of having been landfilled are shown on the attached drawing no. D.1.6.

(iii) The areas that have been restored

No areas have yet been fully restored. Since recording of waste quantities and waste types was initiated in 1995, inert waste was landfilled at the facility. This has provided previously landfilled construction and demolition waste with some 350,000 tonnes of subsoil and stone capping.

(iv) The type of capping employed

As mentioned above, the temporary capping in place at present consists of subsoil and stone of varying depths. As no topographic survey was undertaken prior to its installation, the depth of capping cannot be confirmed at any given location. However, in recent years, excavations for various activities have indicated that the depth of capping varies between 0.5-1.5m.

(v) The condition of the restored areas

The construction of Phase I of the planned development works is currently underway. The landscaped mounds shown along the northern boundary of the landfill are nearing completion. On completion of Phase I in early 2004 much of the previously landfilled area will be capped to final restoration level and to the specification detailed below. The landscape mounds at the perimeter will be complete, screening operations from neighbouring properties and directing rainwater away from landfilled areas.

(vi) Recommendations on final capping to be installed

Drawing B7498-C010-B details the proposed development works. Both Phases I and II are scheduled for completion by the end of 2004. On completion of these Works, most areas previously landfilled other than sideslopes will be covered by impermeable hardstand. Areas not covered by hardstand will be topsoiled and planted. Both hardstanding and topsoiled areas will be profiled in accordance with the restoration plan (Drawing OCM-01). The restoration profile, the extent of hardstand and planting of topsoiled areas will minimise the entry of incident rainfall through the capping to previously landfilled material. This will further reduce the minimal risk of negative impacts on the facility's environs. The profile indicated on the restoration plan provides for placement of the capping materials to the following depths on top of the existing temporary capping:

Landscaped Areas

1-2m of subsoil and 0.25-0.5m topsoil finish

Hardstand Areas

1-2m of subsoil and 0.25-0.5m stone sub-base and concrete/tarmacadam finish.