Attachment H

Materials Handling

H.1 Waste Types & Quantities – Existing & Proposed

Restoration of the active pit workings is at present subject to compliance with the existing WMP 2007/22.

The phased scheme for final restoration of the area is shown by Figures B.2.1 & B.2.4. The volume of material required to be imported to the site to complete the proposed restoration scheme has been calculated (using the Digital Terrain Modelling Software Package LSS) and is shown below.

Volume of Void Space Remaining at Kiernan Sand & Gravel Ltd, Foxtown, Co. Meath

Phase	Void Space m^3	*Compacted Volume m^3	**tonnes	Life Span
1	*67,000*	*73,700*	*147,400*	1
	67,000	*73,700*	*147,400*	*2*
	67,000	*73,700*	*147,400*	*3*
2	*67,000*	*73,700*	*147,400*	*4*
	67,000	*73,700*	*147,400*	*5*
	67,000	*73,700*	*147,400*	*6*
3	*67,000*	*73,700*	*147,400*	*7*
	33,500	*36,850*	*73,700*	*7.5*
Totals	*502,500*	*552,750*	*1,105,500*	*7.5*

Notes:

* An approximate settlement factor of 10% has been assumed following placement of materials.

* Assumes 67,000 m^3 recovered per annum (subject to market conditions).

** Assumes density of imported soils as 2 tonnes/m^3

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert soils, stone and recovery of clean construction and demolition waste. It is estimated that c. 20,000 tonnes per annum of inert construction and demolition waste will be recovered at the facility. Recovered material will be used for internal haul roads and/or dispatched offsite. Further details with respect to the type of materials including European Waste Catalogue code references are provided in the following table Table H.1(ii). No other waste types shall be accepted or recovered at this facility

TABLE H.1(ii) WASTE - Other Waste Recovery/Disposal

Waste material	EWC Code	Main source[1]	Quantity		On-site recovery/disposal[2]	Off-site Recovery, reuse or recycling	Off-site Disposal
			Tonnes / month	m^3 / month	(Method & Location)	(Method, Location & Undertaker)	(Method, Location & Undertaker)
Concrete	17 01 01	Site Clearance	1,670	835	Will be used to construct haul roads and hardstanding areas on site and/or processed for secondary aggregates	Not Applicable	Not Applicable
Bricks	17 01 02	Site Clearance			As Above	Not Applicable	Not Applicable
Tiles & Ceramics	17 01 03	Site Clearance			As Above	Not Applicable	Not Applicable
Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	17 01 07	Site Clearance			As Above	Not Applicable	Not Applicable
Track ballast other than those mentioned in 17 05 07	17 05 08	Site Clearance			As Above	Not Applicable	Not Applicable
Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	17 09 04	Site Clearance			As Above	Not Applicable	Not Applicable
Soil and stones other than those mentioned in 17 05 03	17 05 04	Site Clearance	12,285	6,140	Used to restore sand & gravel pit workings	Not Applicable	Not Applicable
Dredging spoil other than those mentioned in17 05 05	17 05 06	Site Clearance			Used to restore sand & gravel pit workings	Not Applicable	Not Applicable

1 A reference should be made to the main activity/ process for each waste.
2 The method of disposal or recovery should be clearly described and referenced to Attachment H.1

H.2 Waste Acceptance Procedures

Materials to be recovered will only be accepted from approved Contractors who are aware of the need for and who undertake strict segregation and sorting of waste prior to transporting it to the application site;

The applicant will endeavour to visit the construction sites to ensure materials are being properly sorted and segregated at source.

Typically loads of up to 9 cu.m will be imported to site. Only hauliers with the appropriate Waste Collection Permits will be accepted.

All truck loads entering the site will be given a preliminary visual inspection from the office at the entrance. If the material is not considered acceptable the haulier is refused entry and directed to return to the producer and/or an appropriate Waste Management Facility.

Any Contractor who persistently carries unacceptable waste to the application site will be denied further use of the facility.

Details of all truckloads entering the site are entered into a logbook maintained by the operator (Refer to Attachment H.2.1).

A designated internal haul road will be maintained to direct site traffic to the tipping area.

Accepted materials will be subject to a second inspection after each load is tipped. Should a load of material indicate contamination of non inert material on inspection, the material is reloaded and the driver instructed to remove the load offsite to an approved facility and/or return to the producer.

Quarantine

Occasionally a load will contain minor contaminants (e.g. plastics, rebar, wood and paper). These items are removed on inspection by a site operative and stored in skips in a designated quarantine area pending removal offsite by a licensed waste disposal contractor to an appropriate disposal facility.

H.3 Waste Handling

H.3.1 Recovery of Soils

Following the second inspection the material will be accepted and placed within the restoration (placement by bulldozer) area or in the case of topsoil placed in temporary storage awaiting final placement.

The lands are to be restored to forestry by importation and recovery of inert materials in accordance with a phased restoration scheme. Designated internal haul roads are used to direct site traffic to the current tipping area. A bulldozer is used to appropriately grade and compact the material to the desired profile as shown by the detailed plans and sections (Refer to Figures B.2.4 and B.2.5). Typically the soil is placed in 2-3 metre lifts with fill slopes of a safe angle of repose of 1:2.

It is proposed to reclaim the lands to a condition / gradient suitable for forestry. Good quality imported soil will be conserved wherever possible to provide the subsoil/top-soil capping. These topsoil's/subsoil's will be handled under dry conditions to minimise compaction. For the purpose of restoration to agricultural/forestry the restored soil profile (capping) shall comprise 300mm topsoil over 1200-1350mm of subsoil.

Progressive restoration involving tree planting and grass seeding of restored area's shall be carried out on a staged basis to reduce the effects of soil erosion, windblown dust, to aid ground stabilisation and as an effective means of weed control. On completion of each phase of development final restoration including grading, planting/seeding and landscaping will be carried out. Final restoration is dependent on the availability of good topsoil/subsoil and subject to suitable weather conditions. In order to allow for continuity of operations it is necessary to have a certain overlap between phases. The final contours and topography for the site is shown by the Final Landform Plan Figure B.2.4 and Cross Sections B.2.5.

Initially for each phase the void will be backfilled to the level of the adjoining public road. These workings will be screened from outside views by the existing steep natural bank running along the public road. The second stage will involve construction of an esker like feature to the final profile as shown by Figures B.2.4 & B.2.5. In general material will be placed in a series of 2 metre lifts to ensure that the material is properly compacted on placement. The outer berm along the public road will be constructed first and subsequently grassed to provide additional screening of the workings from the nearest residences.

In order to access the pit floor the haul roads shall be constructed using suitable imported material (i.e. brick, block, concrete and stone). The proper construction of the haul road will help minimise the amount of mud and dust generated by lorries entering and leaving the site.

The final landform will comprise a ridge running northwest to southeast which will be similar in profile to the original esker ridge that ran through the lands (Refer to Figure B.2.4).

H.3.2 Recovery of Construction Materials

Clean construction and demolition waste will either be placed directly on haul roads or temporarily placed in storage awaiting recovery.

Recovery and re-cycling activities at the application site will involve tipping of previously stockpiled 'unprocessed' material into a crushing & processing plant using a front-end loader (Refer to Figure D.1.1). The processing is undertaken periodically as materials are required using the existing semi mobile crushing and screening plant on site. Material produced by the plant will then be transported by front-end loader from production stockpiles around the plant to 'processed' stockpiles. Recycled material will be loaded and dispatched from 'processed' stockpiles.

No sorting of materials other than separation of rebar from concrete will be undertaken on site as all material will be sorted and segregated at source before being brought to the application site. Rebar (reinforced steel) separated from concrete will be stored in a skip prior in the designated quarantine area awaiting removal off-site by a licensed scrap merchant.

H.4 Waste Arisings

The applicant will endeavour to visit the construction sites to ensure materials are being properly sorted and segregated at source.

The facility generates small volumes of office and canteen wastes which are stored in wheelie bins awaiting collection. A licensed waste collection contractor has been appointed to remove any canteen waste requiring recovery/disposal to a licensed waste management facility.

Occasionally a load will contain minor contaminants (e.g. plastics, metal, wood and paper). These items are removed on inspection by a site operative and stored in skips in a designated quarantine area pending removal offsite by a licensed waste disposal contractor to an appropriate recovery/disposal facility.

Waste oil products are stored within the existing container on site. Waste oils are disposed of by a licensed waste contractor and removed off site. All oil barrels and lubricants are stored on spill pallets/ spill trays. Spill kits are also maintained on site and the Company will put in place an emergency response procedure for hydrocarbon spills and appropriate training of site staff in its implementation.

Details with respect to the appointed waste recovery/disposal contractor including waste collection permit number and destination (waste licence/permit register number, licensing/permitting authority) are maintained.