

TABLE OF CONTENTS

SECTION	PAGE
20.0 INTERACTIONS	20-1
20.1 Introduction	20-1
20.2 Human Beings and Flora & Fauna	20-3
20.3 Human Beings and Air	20-3
20.4 Humans Beings and Noise	20-3
20.5 Human Beings and Water	20-4
20.6 Humans Beings and Traffic	20-4
20.7 Humans Beings and Landscape.....	20-5
20.8 Flora & Fauna and Air	20-5
20.9 Flora & Fauna and Landscape	20-6
20.10 Climate and Air	20-7
20.11 Noise and Traffic.....	20-7

LIST OF TABLES

Table 20.1 Interactions

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20.0 INTERACTIONS

Section 1 (Introduction), Section 6 (Site Setting) and Section 8 (Description of the Proposed Development) of the EIS should be referred to before reading this section.

20.1 Introduction

This chapter describes interactions/inter-relationships between various aspects of the environmental impact assessment. Table 20.1 below identifies each section of the environmental statement where potential impacts or environmental effects of specific topics within the environmental statement interact/inter-relate between each other.

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Table 20.1: Interactions

	Human Beings	Flora & Fauna	Climate	Air	Noise	Soils & Geology	Water	Traffic	Landscape	Material Assets
Human Beings										
Flora & Fauna	x									
Climate										
Air	x	x	x							
Noise	x									
Soils & Geology										
Water	x	x								
Traffic	x				x					
Landscape	x	x								
Material Assets										

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20.2 Human Beings and Flora & Fauna

The purpose of this development is to restore the lands to Eastern Kildare Uplands Transition character, and in doing so meet the specific objective of the Kildare County Development Plan 2005 – 2011 for Walshestown Pit No. 9. The final restoration plan has been developed to meet the following key objectives:

- Final end-use is to provide semi-natural grassland area, managed through light grazing;
- Encourage wide range of habitats for maximum ecological diversity and its value for wildlife;
- Integrate the final landform into the local landscape;
- To improve the visual quality of the existing Site for surrounding sensitive visual receptors, in particular views from the Punchestown Racecourse; and
- To deliver a high quality planting scheme of lasting benefit.

As highlighted in these key objectives, the general landscape will dramatically improve. Further benefits to the general public will result from the introduction of semi-natural grasslands and other habitats which will be selected for maximum ecological diversity and wildlife value.

20.3 Human Beings and Air

As with all earthmoving activities which are the basis of this proposal, these activities can give rise to elevated dust, in particular during periods of dry weather. Any such activities will be transient in nature and will be dealt with by implementing mitigation measures. The release of fine particulates during short periods of ground disturbance will also be minimised through good on-Site practices and mitigation measures (details are provided in Section 20.8 below).

It is not anticipated that the proposed development will have a major impact on air quality in the area. The mitigation measures outlined for both the construction and operation phases of the development will ensure that impacts are kept to a minimum. It is anticipated that once restoration is complete that deposition levels will all be lower than the existing rates as all bare un-vegetated areas will be capped and vegetated.

20.4 Humans Beings and Noise

The proposed activities will generate noise during the construction and operational phases of the proposal. However, detailed mitigation measures are proposed to reduce or eliminate any potential impacts on the surrounding community (Section 15).

The Applicant is committed to meet the NRA and EPA Guideline Values for both phases of this development. Furthermore, the Applicant has successfully managed its quarrying and waste activities at the Site since the late 1960's and will continue to do so in a responsible manner, as required by them under the Irish Construction Federation (ICF) Environmental Code of Practice.

An Environmental Management System currently exists for this Site for previous quarrying and waste related activities, and this will continue to be the case for the life of this project.

20.5 Human Beings and Water

Groundwater levels have been monitored on an approximately monthly basis between November 2007 and August 2008 at the Application Site, and analysed for quality on two occasions. Information gathered during this exercise confirmed that groundwater flow direction is generally from east to west. Data relating to this monitoring is included in Section 12, and provided the baseline information necessary for the proposed continued development. Groundwater monitoring will be carried out at the Application Site in accordance with the conditions attached to the current Waste Permit and any future EPA Licence in order to ensure that contamination of the groundwater does not occur. Figure 19.1 shows the proposed groundwater monitoring locations.

The restoration activity will serve to integrate the bare worked-out quarry Site into the surrounding landscape, in a manner sensitive to the visual amenity of the area. The Application Site will be restored under the terms of an EPA Waste Licence, as requested by Kildare Co. Council. Backfilling of the Site will occur in the worked-out areas using inert materials, and the lands will be capped so as to protect the groundwater environment into the future. Finished restoration contours will be in keeping with the surrounding landscape.

20.6 Humans Beings and Traffic

A detailed Traffic and Transport Assessment was undertaken of the road network accessing the Application Site. Two developments adjacent to the proposed quarry restoration operation have been identified. Behan's Land Restoration Ltd and CPI Ltd generate considerable HGV traffic movements in the vicinity of the proposed development and are also serviced by the L6042 County Road. The cumulative impacts of all three developments have been identified and assessed as part of this Traffic and Transport Assessment.

The assessment indicates that the R410/L2023 junction will continue to operate within capacity until the year 2018. Between 2018 and 2023 the junction would operate above capacity in the PM Peak hours. Following the cessation of restoration work activity the R410/L2023 junction will operate below capacity in the PM Peak. The provision of a "ghost-island" right turn lane would improve the operational performance of the R410/L2023 junction after 2018, and it is recommended that the provision of a "ghost-island" right turn

lane be incorporated into a redesigned R410/L2023 junction that meets the requirements as set out in NRA DMRB TD 42 and that such a redesigned junction should be operational from the year 2018.

20.7 Humans Beings and Landscape

Existing visual impacts are significant from the recreational receptors at Punchestown Racecourse in the short term during early Site establishment, these impacts will however reduce once screen mounding is in place and perimeter planting becomes established. Seeding and greening of the eastern slopes will further reduce potential impacts from the Punchestown aspect.

Visual impacts are limited to a few residential properties around the Site and to road users gaining local access. A progressive restoration programme will provide a mixed end use of grazing, and nature conservation elements including a linear wetland area. Adjoining and visually linking the Site with Punchestown, a landscape of fields divided by species-rich hedgerows will be created (Figure 16.6).

The proposals include restoration of the entire Site; which will improve the immediate setting and surrounding landscape. A combination of grassland establishment and reinstatement of hedgerows/hedgerow enhancement will significantly improve the integration of the Site with the surrounding landscape. The use of native plant species will help to reinforce this integration. The creation of a lake feature will diversify the wildlife and habitat creation value of the Site.

The overall impact on landscape character of the proposed restoration/final closure scheme (after completion) is predicted to be **moderate beneficial**.

20.8 Flora & Fauna and Air

Dust minimisation measures will be implemented and are outlined in Section 14.5, these include the following which will reduce or eliminate any impacts on the surrounding flora and fauna:

- Site roads will be regularly cleaned and maintained and any site roads with the potential to give rise to dust will be regularly watered, as appropriate during dry and/or windy conditions;
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind;
- Water misting or sprays will be used as required during particularly dusty activities or during dry or windy periods; and

- Ensure that all plant and machinery on site are suitably maintained to ensure that emissions of engine generated pollutants are kept to a minimum.

Ultimately the planned restoration makes provision for the retention and enhancement of existing habitats, together with the creation of new diverse areas, which will result in a net benefit in ecological terms in the longer term post development.

20.9 Flora & Fauna and Water

The planned restoration makes provision for the retention and enhancement of existing habitats, together with the creation of new diverse areas. Many of these provisions include the retention and development of water based habitats. Specific actions relating to these water based habitats include:

- Wet grassland area adjoining the proposed water feature to be created for fauna;
- The creation of a linear water feature along the western edge of the Site with surrounding vegetation to increase its attractiveness to wildlife; and
- The majority of the Site will be managed for the development of species-rich grassland, with wet grassland and water bodies in the west of the Site.

20.10 Flora & Fauna and Landscape

The purpose of this development is to restore the lands to Eastern Kildare Uplands Transition character, and in doing so meet the specific objective of the Kildare County Development Plan 2005 – 2011 for Walshestown Pit No. 9. The final restoration plan has been developed to meet the following key objectives:

- Final end-use is to provide semi-natural grassland area;
- Encourage wide range of habitats for maximum ecological diversity and its value for wildlife;
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- To deliver a high quality planting scheme of lasting benefit.

Ultimately the planned restoration makes provision for the retention and enhancement of existing habitats, together with the creation of new diverse areas, which will result in a net benefit in ecological terms in the longer term post development.

20.11 Climate and Air

Baseline studies carried out indicate that air quality in the immediate environs of the Application Site currently meet EPA Guideline Values for existing quarrying and waste activities at the Site. The main potential impact during the construction and operational phases will be due to airborne dust and potential dust deposition outside the Application Site boundaries.

The number of days when the grounds of the Application Site and haul roads will be saturated will be substantially greater, especially during the winter months when evaporation from the surfaces is much lower compared to the summer. The rainfall records indicate that some 185 days during the year typically record in excess of 0.2 mm, with levels of precipitation exceeding 1 mm on for approximately 131 days.

These surface conditions will significantly reduce the potential for the re-suspension of dust due to trucks travelling along the access and internal haul road surfaces. However, during the drier months, higher day-time temperatures and lower relative humidity will increase the evaporation rate of moisture from the road surfaces and so this will increase the potential for dust-blow from surfaces especially during windy conditions.

Detailed dust mitigation measures are summarised in Section 20.8 above. It is anticipated that once restoration is complete that deposition levels will all be lower than the existing rates as all bare un-vegetated areas will be capped and vegetated.

20.12 Noise and Traffic

With the exception of noise monitoring location N1, all locations monitored during the baseline noise assessment carried out at the Application Site were below the EPA Guideline Values. The N1 exceedance resulted primarily from traffic movements on the L2042, in particular from HGVs accessing the adjoining quarry and land restoration developments.

In order to mitigate against impacts from noise and traffic as a result of this continued development, traffic movements will be maintained at existing established levels under the 1996 permission (P.P.R. No. 96/100, P.L.09.098844).