



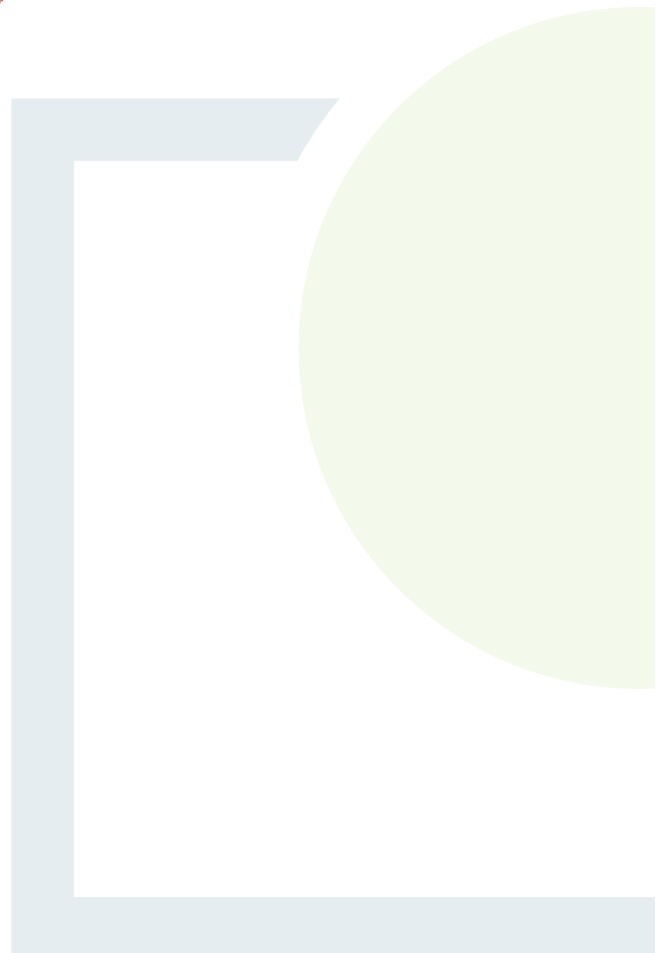
**FEHILY
TIMONEY**
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ENVIRONMENTAL SCIENCE & PLANNING**

APPENDIX 1

**Tier 1 Risk Assessment
Kerry County Council**

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Comhairle Contae Chiarraí

Kerry County Council

► Tier 1 Review Report – Bawnluskaha (Castleisland), Killarney ◀

S22-02668

December 2011

Prepared by:

Environmental Services,
Kerry County Council.

Seirbhísí Comhshaoil,
Comhairle Contae Chiarraí.

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2.0 Introduction.

In 2007 an initial Tier 1 Risk Assessment of all identified unregulated waste disposal sites was undertaken by the Environment Section of Kerry County Council.

The assessment was completed on foot of;

- the Ministerial Direction (WIR 04/05) reminding Local Authorities of their responsibilities under Section 22 of the Waste Management Acts, 1996 to 2005
- the Environmental Protection Agency's Code of Practice (CoP) - Environmental Risk Assessment for Unregulated Waste Disposal Sites.

The site was subsequently registered on the EPA Section 22 Register and given the reference code S22-02662. It was assigned a High Risk (Class A) classification.

A copy of the assessment is included in Attachment No 1 for reference.

This report updates the initial assessment taking cognisance of the guidance within the CoP to review sites on an annual basis and in light of SI 524 of 2008, Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008.

3.0 Risk Assessment Methodology – Tier 1

3.1 Introduction

Tier 1 of the Risk Assessment Methodology - Conceptual Site Model, Risk Screening and Prioritisation includes a preliminary investigation of the site and also comprises the development of a Conceptual Site Model using information obtained from the desk study and site inspection.

The Conceptual Site Model outlines the different Source-Pathway-Receptor (SPR) linkages and provides information for the risk-screening element. The information gleaned from the desk appraisal and walk over survey is summarised in the Appendix number 2.

3.2 Risk Screening

Risk screening represents an assessment of the SPR linkages in the conceptual model. The Conceptual Site Model identifies each of the elements of the linkage present for the site and the associated uncertainty.

The Conceptual Site Model will determine whether a site represents (or potentially represents) an unacceptable intrinsic risk to any receptor.

The risk that is being assessed is the intrinsic risk that the activity poses without any mitigation measures having been put in place. The actual risk posed to the environment will be reduced following remediation measures.

3.3 Desk Study (Tier 1 Risk Assessment)

A desk study of the site has been undertaken. The information has been gathered from various sources including:

- Local authority sources including records and interview,
 - ground water vulnerability maps
 - surface water channels
 - aquifer data
 - sources of public water supplies
 - NHA, SAC, SPA register map
- Section 22 register (existing)
- Waste Plans
- Complaints database
- Permit register
- EPA waste reports (including NWD report)
- EPA IPPC facilities

- EPA waste licenced facilities
- An Foras Forbatha reports
- Aerial photography

4.3 Walk Over Survey.

A walk over survey has been conducted on the identified site. TBC

The results have been recorded in Appendix No 2 and the allocation of scores to the Risk Prioritisation exercise has been amended.

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4.0 Site Summary.

Location.

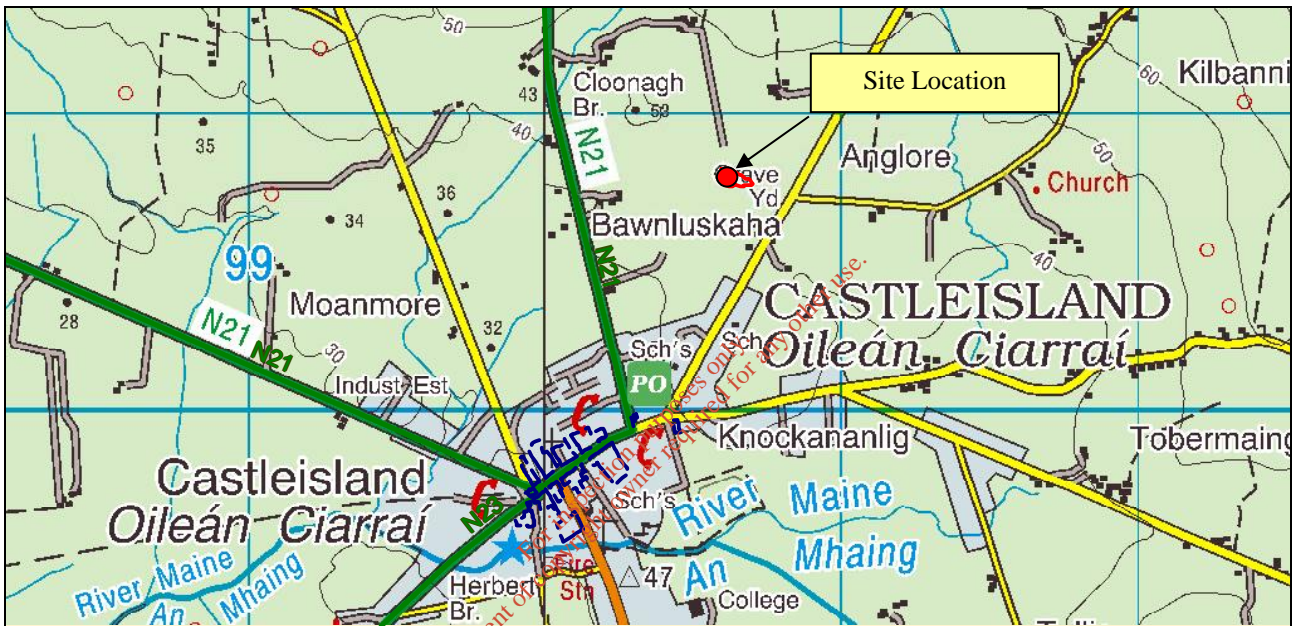
The unregulated closed site is located in the townland of Bawnluskaha approximately 770m northwest of Castleisland Town Centre.

The site is within an area used for agricultural purposes.

The immediate boundaries of the assumed footprint of the site are agricultural. However, there are a number of dwellings in proximity to the site.

The site is located in the townland of Bawnluskaha but is referred to as Castleisland landfill.

Site Location, (1:20,000)



Site Layout and extent of waste.

The exact footprint of the waste as placed is as yet unknown.

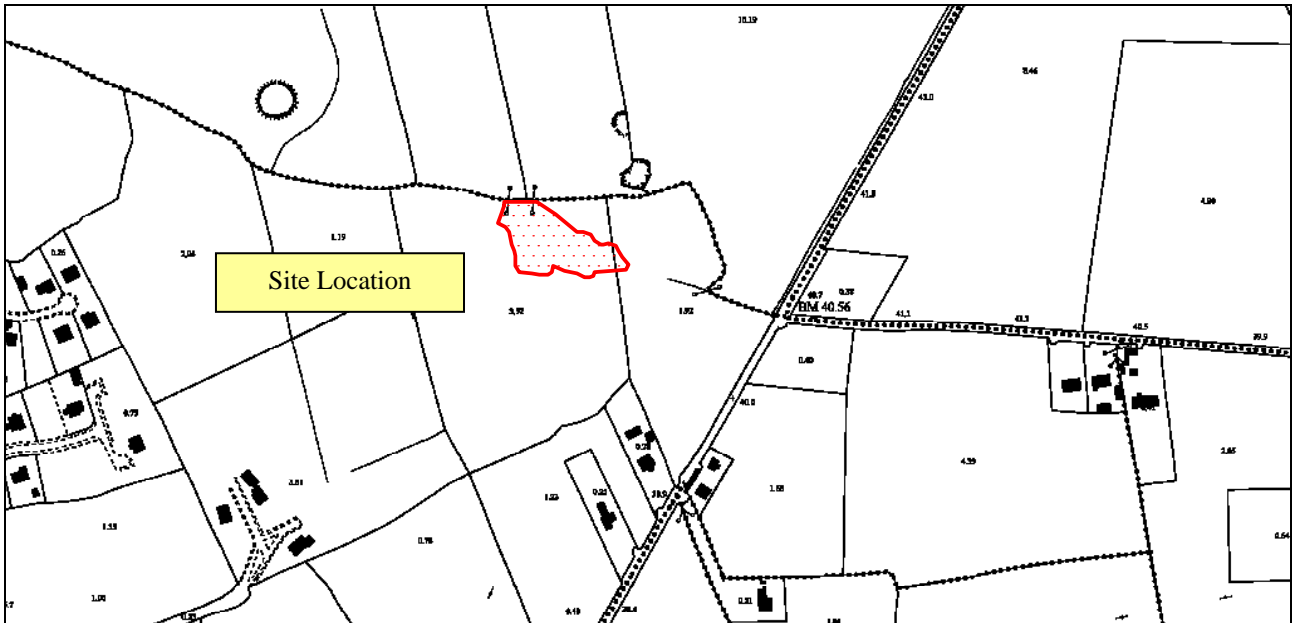
The extent is therefore assumed as the footprint of the quarry as shown on the 1896 ordinance map.

The grid reference to the approximate centre of the property holding is 110,0708/110,779.

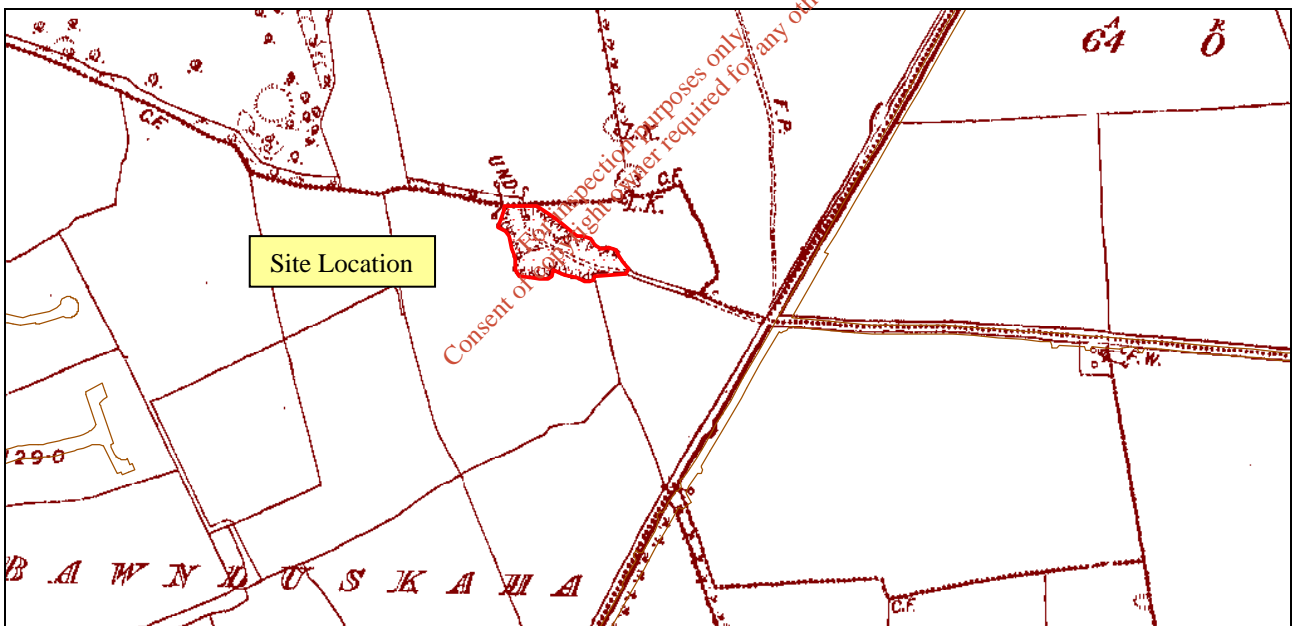
The following layout map outlines the surrounding land use and geographic features.

The site is not in the ownership of the Local Authority – ownership is private and absolute (details of Folio and holding on file).

Site Location, scale 1;5,000



Site Location scale 1;5,000 – Old Ordinance Map



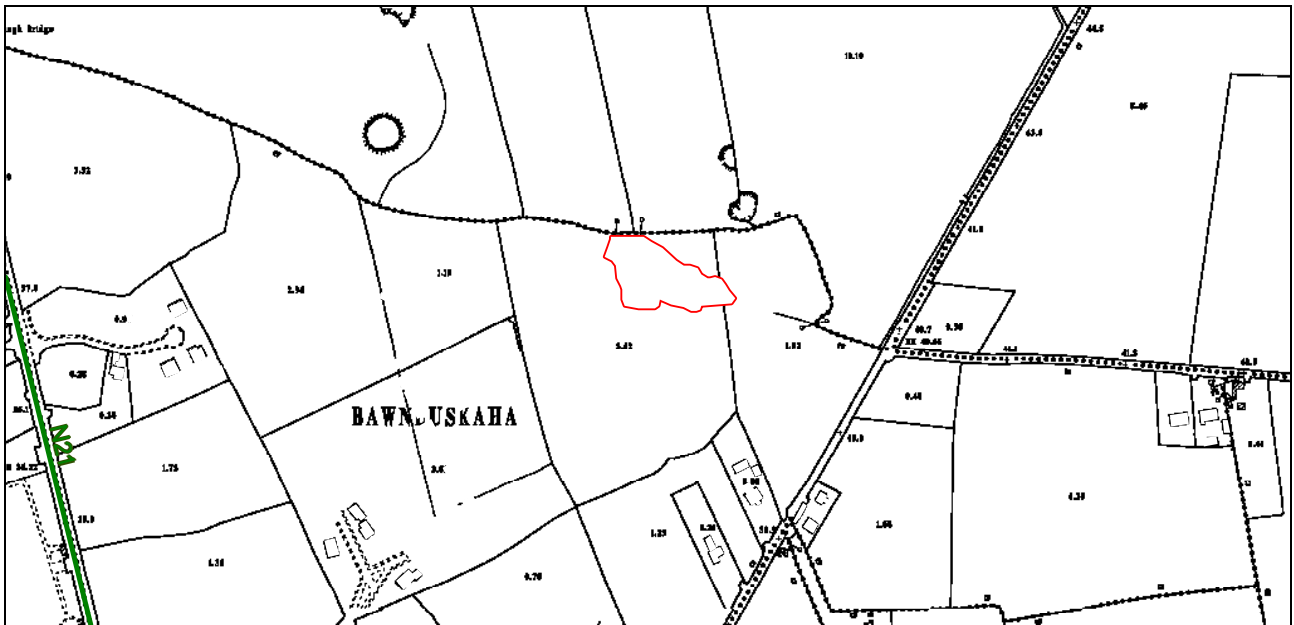
This 1896 map indicates the footprint of the quarry at that location, there are number of Lime Kilns in the environs and inspection of the maps other such workings.

This is taken as the most likely footprint pending any further investigations.

Waste was placed at the site by Local Authority sources from *****.

It is estimated from the An Foras Forbartha report on National Database on Waste that filling rates were in the region of 1,600 tonnes per annum.

Using the data above and assuming the footprint of the waste matches that of the property holding then the area of the site is in the region of ***** m² (<1 Ha).



This overlain map indicates dwellings constructed since the map area was surveyed.

Available Aerial photography

There are two sets of available aerial photography from 2000 and 2004. These are presented in the following pages

Aerial Photography (scale 1:5,000) – 2004



Aerial Photography (scale 1:5,000) - 2000



Aerial Photography (scale 1:5000) – 1995



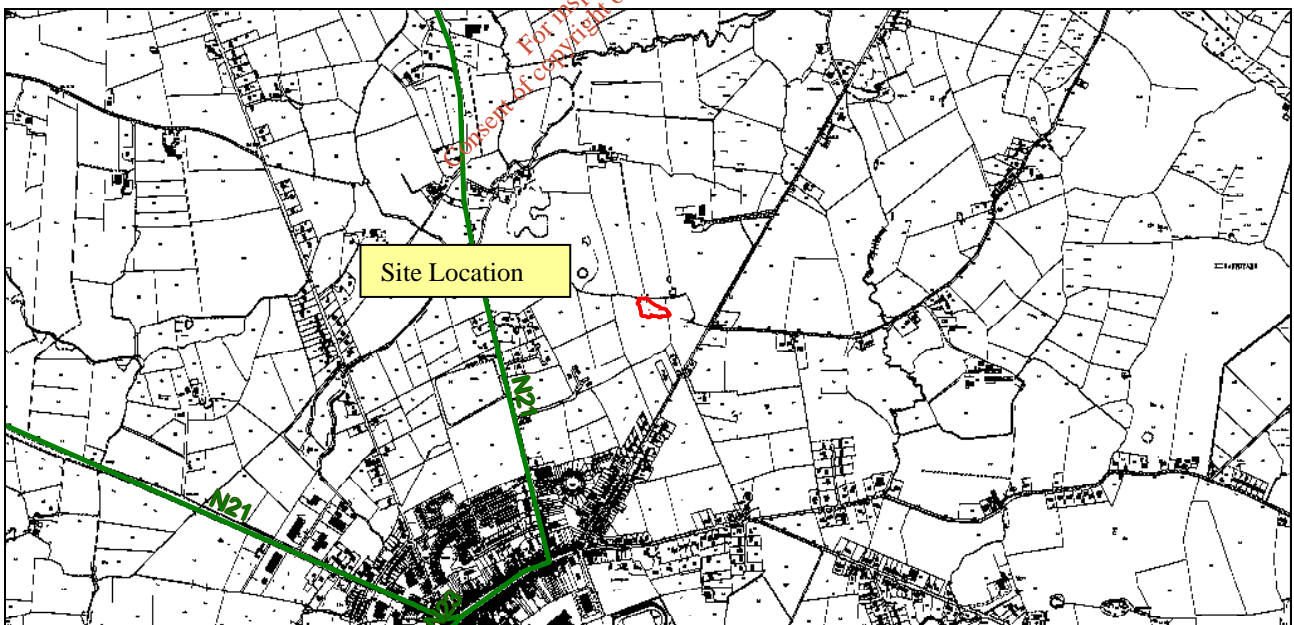
Aerial Photography (scale 1:5000) – Year unknown (source GSI).



Designated and Proposed Designated Sites

There are no designated or proposed designated sites within the general area

Designated and Proposed Designated Sites

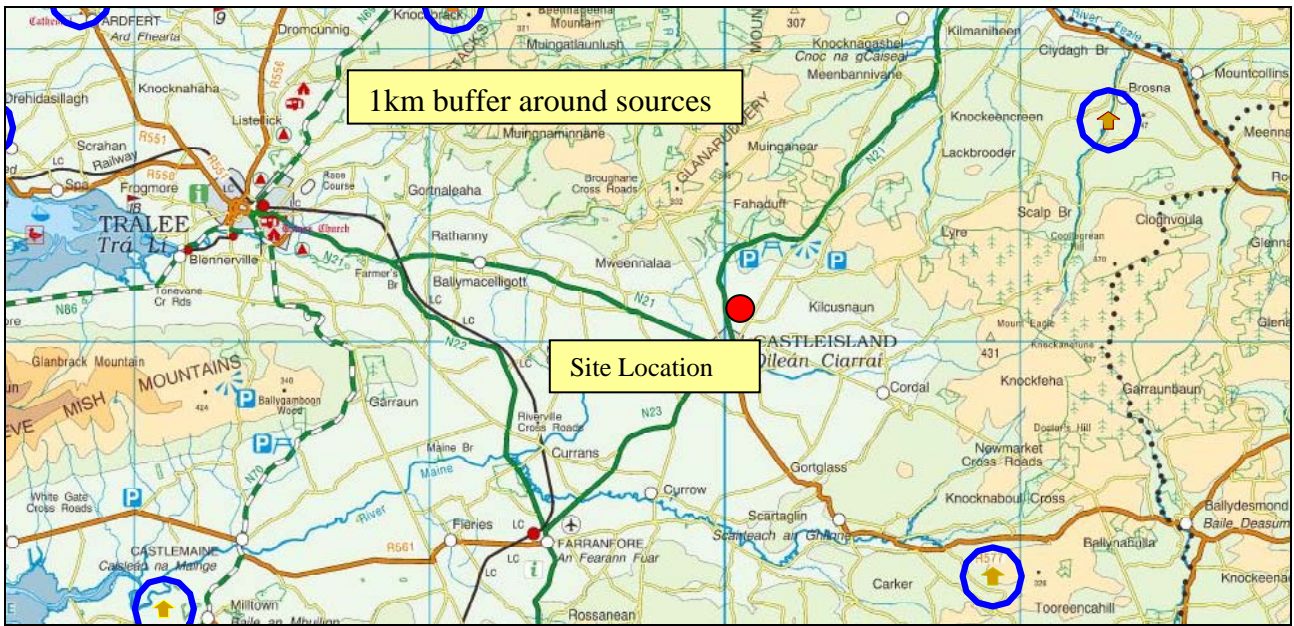


| | | |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3B | Score 0 |
|---|----------|---------|

Water Resources

The site is not located within any Source Protection Area. The 1km buffer zones are shown blue on the following map.

1km Buffer areas 1:200,000

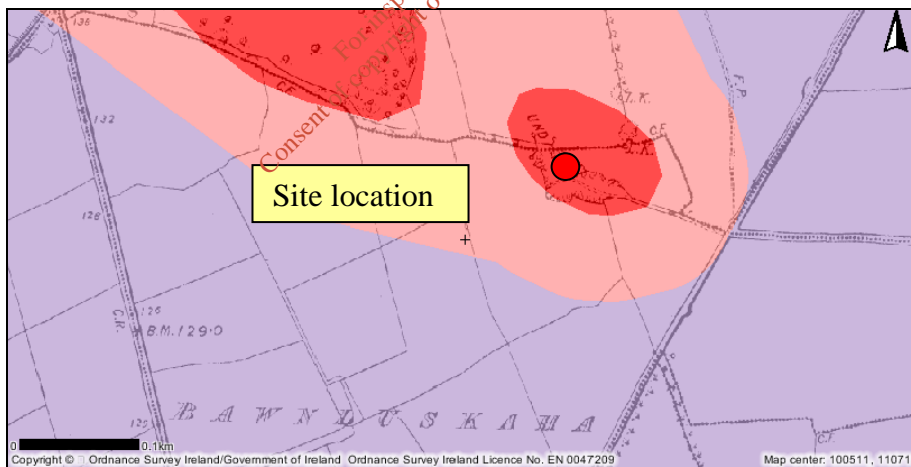


The following score is conservative in consideration of the location of the site relative to the source point shown.

| | | |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3D | Score 3 |
|---|----------|---------|

Groundwater vulnerability and aquifer

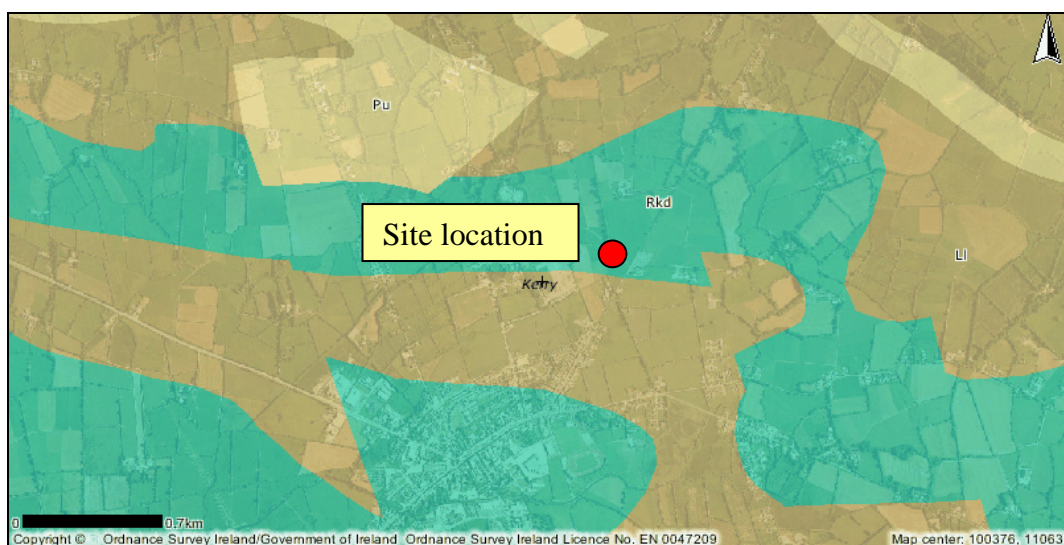
Groundwater vulnerability, scale 1:5,000



The site is located in an area that designated as X (Rock near surface) and surrounded by Extreme (E).

| | | |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2A | Score 3 |
|---|----------|---------|

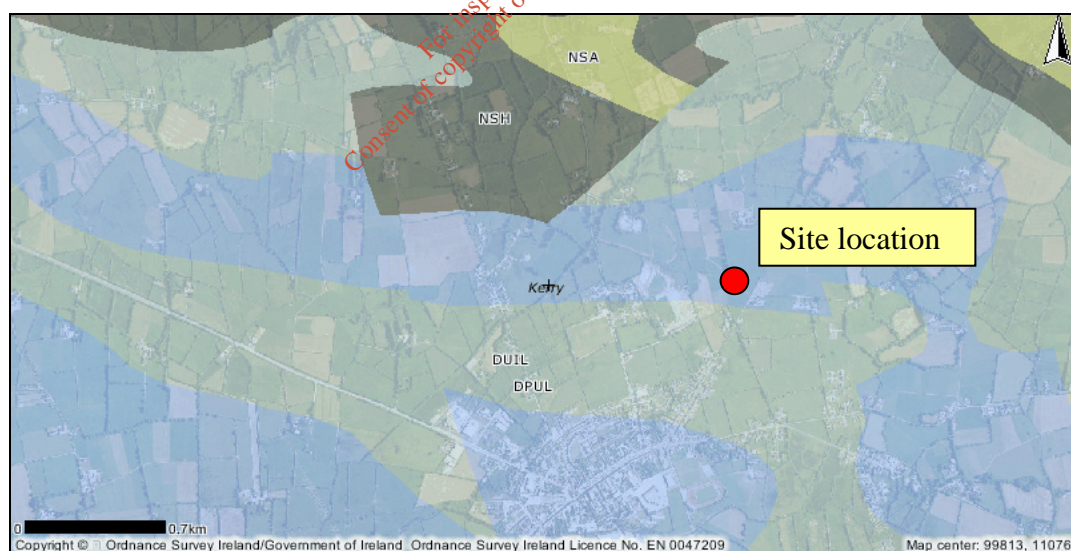
Aquifer status, scale 1:25,000



The Rkd status implied that the bedrock aquifer is regionally important aquifer, karstified (diffuse).

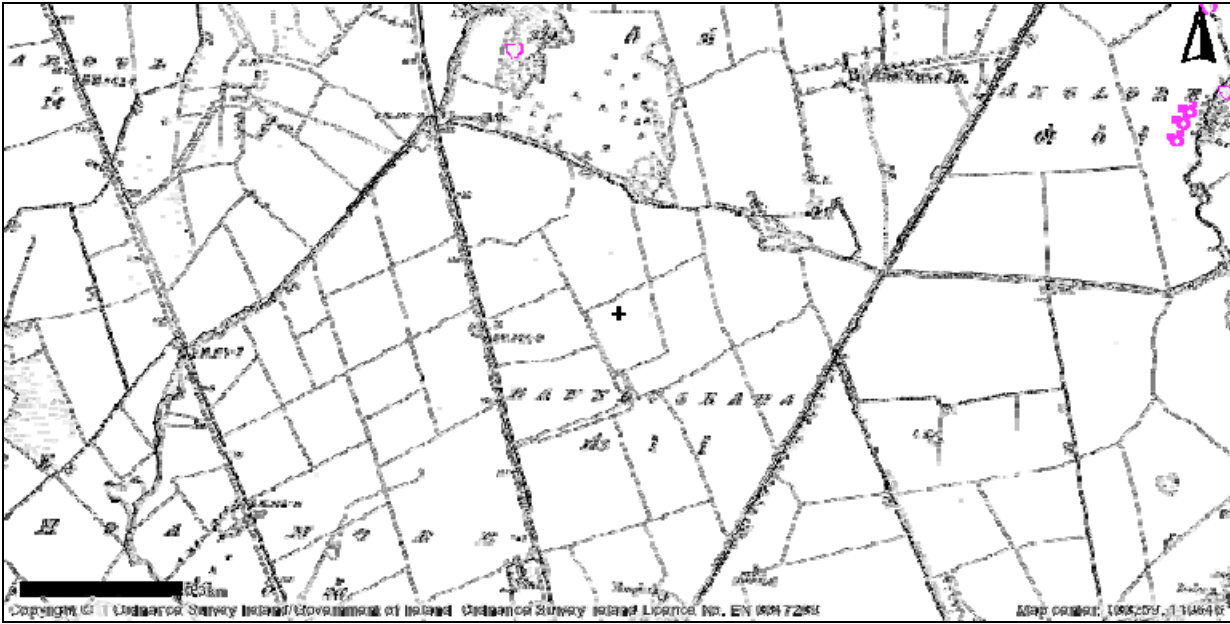
| | | |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3C | Score 5 |
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2B | Score 5 |

Bedrock Geology, scale 1:25,000



The bedrock is designated as DPUL – Dinantian Pure Unbedded Limestones

Karstic Features



There are a number of Karstic features in the general area of the site as shown above.

Surface water.

There are no surface water courses in the immediate area of the site. The site is in excess of 700m from the nearest point of any watercourse.

| | | |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2C | Score 2 |
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3E | Score 3 |

Soil Types



Sub-soil Categorisation



Landfill Gas

Reference to the location map indicates the presence of domestic dwellings within 100m of the western boundary of the site. The soils and sub soils are Tills.

This score may be revised pending site investigations.

There is no dwelling above the footprint of the waste.

| | | |
|---|----------|-----------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2D | Score 1.5 |
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2E | Score 0 |
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3A | Score 2 |
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3F | Score 3 |

Summary of Risk Screening

The following tables set out the scores used in the risk screening exercise and the results of that exercise.

Summary of Risk Screening Scores

| | | | |
|----------|--|----------|-----|
| Source | Leachate – Source/Hazard Scoring Matrix | Table 1A | 5 |
| | Landfill Gas – Source/Hazard Scoring Matrix | Table 1B | 5 |
| Pathway | Leachate Migration – Pathways (vertical) | Table 2A | 3 |
| | Leachate Migration – Pathways (horizontal) | Table 2B | 5 |
| | Leachate Migration – Pathways (surface water drainage) | Table 2C | 2 |
| | Landfill Gas – Pathways (lateral) | Table 2D | 1.5 |
| | Landfill Gas – Pathways (vertical) | Table 2E | 0 |
| Receptor | Leachate Migration – Receptors (human) | Table 3A | 2 |
| | Leachate Migration – Receptors (protected areas) | Table 3B | 0 |
| | Leachate Migration – Receptors (aquifer status) | Table 3C | 5 |
| | Leachate Migration – Receptors (public water supply) | Table 3D | 3 |
| | Leachate Migration – Receptors (surface water bodies) | Table 3E | 3 |

Summary of SPR Linkages.

| <i>SPR</i> | <i>Linkage</i> | <i>SPR score</i> | <i>Max</i> | <i>Normalised</i> | <i>Risk</i> |
|------------|--------------------------|------------------|------------|-------------------|-------------|
| SPR 1 | 1a * (2a + 2b + 2c) * 3e | 150 | 300 | 50% | MODERATE |
| SPR 2 | 1a * (2a + 2b + 2c) * 3b | 0 | 300 | 0% | LOW |
| SPR 3 | 1a * (2a + 2b) * 3a | 80 | 240 | 33% | LOW |
| SPR 4 | 1a * (2a + 2b) * 3b | 0 | 240 | 0% | LOW |
| SPR 5 | 1a * (2a + 2b) * 3c | 200 | 400 | 50% | MODERATE |
| SPR 6 | 1a * (2a + 2b) * 3d | 120 | 560 | 21% | LOW |
| SPR 7 | 1a * (2a + 2b) * 3e | 120 | 240 | 50% | MODERATE |
| SPR 8 | 1a * 2c * 3e | 30 | 60 | 50% | MODERATE |
| SPR 9 | 1a * 2c * 3b | 0 | 60 | 0% | LOW |
| SPR 10 | 1b * 2d * 3f | 23 | 150 | 15% | LOW |
| SPR 11 | 1b * 2e * 3f | 0 | 250 | 0% | LOW |

Based on the above assessment this is a MODERATE RISK CLASS B Site – full details are included in Appendix 1

5.0 Conclusions.

Based upon the desktop appraisal and walk over survey the calculated risk associated with this site is Moderate.

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