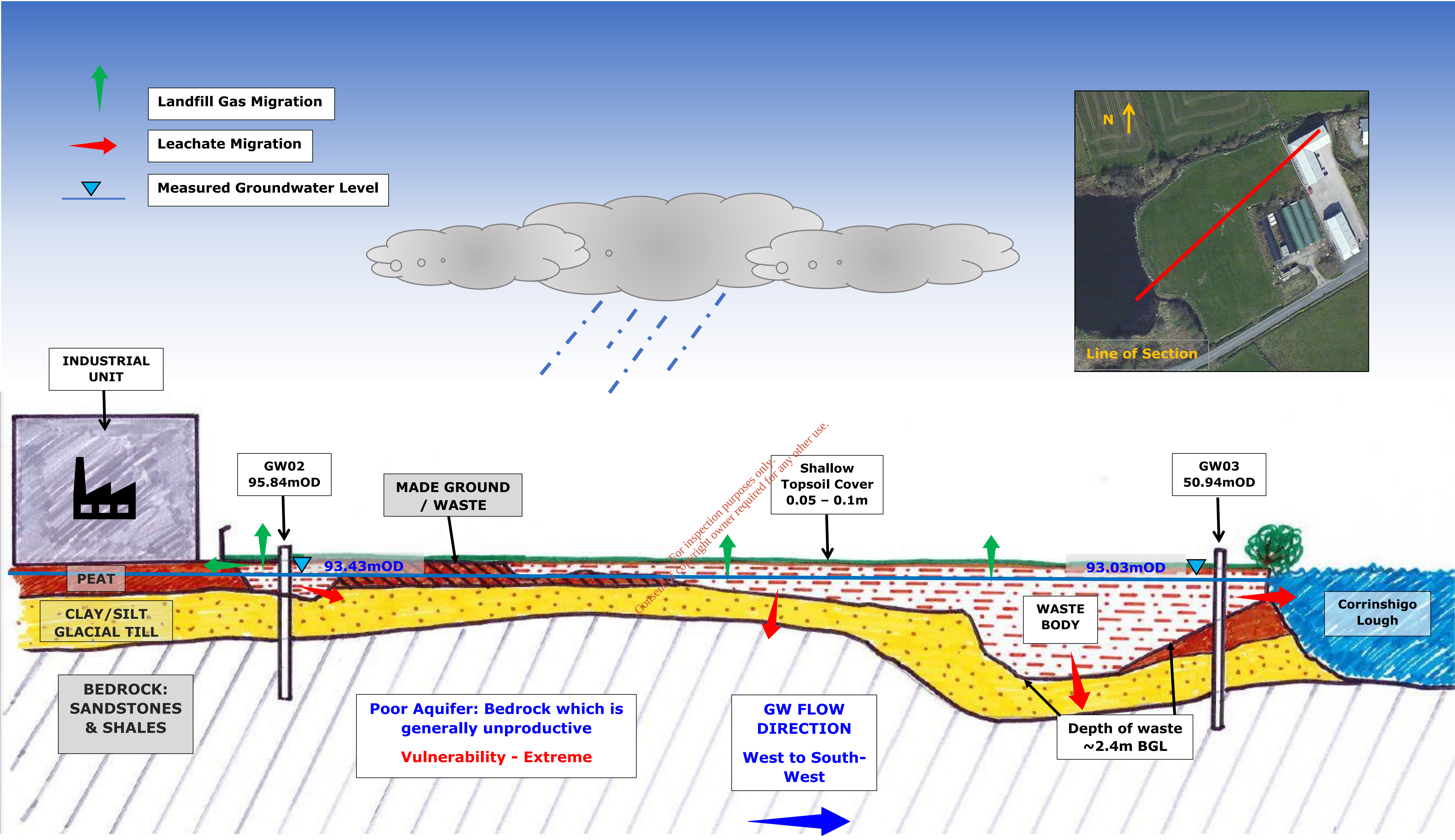

CROSS SECTION NORTH-EAST / SOUTH-WEST

FIGURE 5.1 KILLYCARD HISTORIC LANDFILL

CONCEPTUAL SITE MODEL

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5.4 Risk Prioritisation

Risk prioritisation enables resources to be prioritised on the highest risk facilities and on the highest source – pathway – receptor linkage potential.

The risk prioritisation process assigns a score to each linkage and the overall score is the maximum of the individual linkages for the site. The higher the score a site/linkage receives the higher the risk.

To classify the risk, scores will be applied to the information obtained during the site investigation of Killycard Historic Landfill. Where there is insufficient information available (i.e. where there is a high degree of uncertainty) the highest score is assumed.

In accordance with the EPA CoP (2007) the scoring matrices are as follows:

- Leachate: Source/hazard scoring matrix, based on waste footprint
- Landfill gas: Source/hazard scoring matrix based on waste footprint
- Leachate migration: Pathway (Vertical)
- Leachate migration: Pathway (Horizontal)
- Leachate migration: Pathway (Surface water drainage)
- Landfill gas: Pathway (Lateral migration potential)
- Landfill gas: Pathway (Upwards migration potential)
- Leachate migration: Receptor (Surface water drainage)
- Leachate migration: Receptor (Human presence)
- Leachate migration: Receptor (Protected areas – SWDTE or GWDTE) (Surface water/groundwater dependent terrestrial ecosystems)
- Leachate migration: Receptor (Aquifer category – Resource potential)
- Leachate migration: Receptor (Public water supplies – other than private wells)
- Leachate migration: Receptor (Surface water bodies)
- Landfill gas: Receptor (Human presence)

Table 5.1 calculates the points awarded to each of the headings listed above.

Table 5-1: Risk Classification Calculation – Killycard Landfill

EPA Ref	Risk	Points	Rationale
1a	Leachate; source/hazard scoring matrix, based on waste footprint.	7	Based on a waste footprint of >1 & <5ha, the shallow permeable soil cap across the site, the presence of elevated ammonia in the groundwater samples and the waste is Municipal Waste a score of 7 is being maintained.
1b	Landfill gas; source/hazard scoring matrix, based on waste footprint.	7	Based on a waste footprint of >1 & <5ha, the discovery of peat below the waste body and the detection of one gas concentration exceedance at GW01 the score is being maintained at 7 due to the proximity of the industrial buildings to the eastern boundary of the waste body.
2a	Leachate migration: Pathway (Vertical)	3	GSI describes the groundwater vulnerability as Extreme and the presence of a shallow permeable soil cap across the site.
2b	Leachate migration: Pathway (Horizontal)	1	The bedrock is classified by the GSI as a Poor Aquifer (PI) - Bedrock which is unproductive except for local zones.

EPA Ref	Risk	Points	Rationale
2c	Leachate migration: Pathway (Surface water drainage)	2	There is a direct connection between the waste body and the adjacent Corrinshigo Lough as verified during the site walkover.
2d	Landfill gas: Pathway (Lateral migration potential)	3	The landfill is surrounded by Made Ground.
2e	Landfill gas: Pathway (Upwards migration potential)	1	The landfill is underlain by peat and there are no building structures present above the waste body.
3a	Leachate migration: Receptor (Human presence)	3	Based on the presence of residential housing and industrial units within 50m of the waste body onsite the score is being maintained at 3.
3b	Leachate migration: Receptor (Protected areas – SWDTE or GWDTE) (Surface water/ groundwater dependent terrestrial ecosystems)	1	Greater than 250m but less than 1km from the waste body/Undesignated sites within 50m of site of the waste body.
3c	Leachate migration: Receptor (Aquifer category – Resource potential)	1	The bedrock is classified by the GSI as a Poorly Productive Aquifer (PI) – bedrock which is unproductive except in Local Zones.
3d	Leachate migration: Receptor (Public water supplies – other than private wells)	0	Greater than 1km (no karst aquifer).
3e	Leachate migration: Receptor (Surface water bodies)	3	Surface water within 50m of site boundary. Corrinshigo Lough adjacent to waste body.
3f	Landfill Gas: Receptor (Human presence)	5	Based on the detection of one gas concentration exceedance at GW01 the score is being maintained at 5 due to the proximity of the industrial buildings to the eastern boundary of the waste body.

Table 5-2: Normalised Score of S-P-R Linkage

Calculator		S-P-R Values	Maximum Score	Linkage	Normalised Score
Leachate migration through combined groundwater and surface water pathways					
SPR1	1a x (2a + 2b + 2c) x 3e	7 x (3+1+2) x 3 = **126**	300	Leachate => surface water	42%
SPR2	1a x (2a + 2b + 2c) x 3b	7 x (3+1+2) x 1 = **42**	300	Leachate => SWDTE	14%
Leachate migration through groundwater pathway					
SPR3	1a x (2a + 2b) x 3a	7 x (3+1) x 3 = **84**	240	Leachate => human presence	35%
SPR4	1a x (2a + 2b) x 3b	7 x (3+1) x 1 = **28**	240	Leachate => GWDTE	11.6%

Calculator		S-P-R Values	Maximum Score	Linkage	Normalised Score
SPR5	1a x (2a + 2b) x 3c	7 x (3+1) x 1 = **28**	400	Leachate => Aquifer	7%
SPR6	1a x (2a + 2b) x 3d	7 x (3+1) x 0 = **0**	560	Leachate => Surface Water	0%
SPR7	1a x (2a + 2b) x 3e	7 x (3+1) x 3 = **84**	240	Leachate => SWDTE	35%
Calculator	**S-P-R Values**		**Maximum Score**	**Linkage**	**Normalised Score**
Leachate migration through surface water pathway					
SPR8	1a x 2c x 3e	7 x 2 x 3 = **42**	60	Leachate => Surface Water	**70%**
SPR9	1a x 2c x 3b	7 x 2 x 1 = **14**	60	Leachate => SWDTE	23%
Landfill gas migration pathway (lateral & vertical)					
SPR10	1b x 2d x 3f	7 x 3 x 5 = **105**	150	Landfill Gas => Human Presence	**70%**
SPR11	1b x 2e x 3f	7 x 1 x 5 = **35**	250	Landfill Gas => Human Presence	14%
Site maximum S-P-R Score					**70%**
Risk Classification					**A – High**

Table 5.2 shows the maximum S-P-R scoring for the site is **70%.**

The following are the risk classifications applied:

- Highest Risk (Class A) Greater than 70 for any individual SPR linkage
- Moderate Risk (Class B)41-69 for any individual SPR linkage
- Lowest Risk (Class C) Less than 40 for any individual SPR linkage

Based on this, the site can be classified as a **High Risk Classification (Class A)**. The principal risks identified on the site are the risk to Corrinshigo Lough from the migration of leachate from the landfill into the surface water receptor, the shallow permeable soil cap across the site contributing to leachate generation and the risk to the adjacent industrial building receptor from the migration of landfill gas from the waste material encountered at the site.

6 CONCLUSIONS & RECOMMENDATIONS

A Tier 2 study was conducted by FT in accordance with the EPA CoP for Killycard Historic Landfill. The study consisted of a desktop study, geophysical survey and intrusive site investigation works. These works informed the development of the CSM and risk screening model.

The findings of the site investigation work and geophysical surveying suggest the waste material is deposited in a single infill area tending west to east in the centre of the site and between approximately 140m in length and 120m in width. The maximum waste footprint including Zone A and Zone B is calculated to be approximately 1.15 hectares.

A volume calculation based on the surveyed surface profiles for the existing ground level and the base of waste as interpreted, preliminary estimates indicate an interred waste volume of approximately 29,700 m^3 at the site.

Analysis of waste samples from the trial pits excavated, when assessed against the inert waste acceptance criteria indicated that much of the waste material meet the inert waste classification. This is likely due to the level of degradation over time since landfilling ceased.

Analysis of groundwater samples recovered from the three monitoring wells GW01 to GW03 have reported ammonia concentrations which exceed guideline threshold values. Given that all monitoring wells were installed within the waste body, as confirmed by the trial pit and geophysical findings, the landfill is contributing to a deterioration in groundwater quality locally. The monitoring boreholes were installed within the waste body due to the restricted space available within the site.

The presence of peat underlying the waste body across the site may also be contributing to the elevated ammonia concentrations detected in the groundwater locally. The combined presence of elevated ammonia and coliform concentrations in all monitoring wells GW01 to GW03 may also be evidence of localised contamination due to agricultural land spreading or poorly functioning septic tanks in the area.

Based on the presence of elevated ammonia concentrations typical of landfill leachate, the shallow soil cap is not considered suitable at preventing rainfall infiltration into the waste body. The groundwater table also appears to be intersecting the waste body and contributing to leachate migration from the landfill.

The detection of elevated lead concentrations of 0.168 mg/l and 0.0743 mg/l at monitoring locations GW02 and GW03 and slightly elevated nickel concentration at GW01 are considered to be evidence of the localised groundwater hydrochemistry based on the presence of historical lead mining north of Castleblayney. Reference is made to several small metallic mineral deposits, most notably lead and zinc, located near Castleblayney as detailed in the EPA's Historic Mine Sites - Inventory and Risk Classification (2009).

Landfill gas monitoring from perimeter wells GW01 to GW03 at the site indicates gas concentrations detected are within the range typical of inert waste with the exception of a slightly elevated methane concentration detected at upgradient sampling location GW01. Based on the detection of slightly elevated gas concentrations and the proximity of the industrial buildings to the eastern boundary of the waste body, additional gas monitoring should be considered as part of future works.

Analysis of surface water samples recovered from the watercourses surrounding the site indicated 2 No. exceedances of the EQS (2009) guideline limit values for ammonia and BOD. Given that he determined groundwater flow direction is west-south-west from the waste body, the detected ammonia and BOD at these levels may be evidence of impact from the landfill. However, the presence of ammonia and BOD at these levels may also be an indication of slurry spreading runoff from the surrounding agricultural fields in the area, rather than direct impact from the landfill.

Based on the results of the Tier 2 site assessment, the site can be classified as a **High Risk Classification (Class A)**. The principal risks identified on the site are the risk to Corrinshigo Lough from the migration of leachate from the landfill into the surface water receptor, the shallow permeable soil cap across the site contributing to leachate generation and the risk to the adjacent industrial building receptor from the migration of landfill gas from the waste material encountered at the site.

6.1 Recommendations

Based on the results of this Tier 2 assessment the site is classified as High Risk. The site is therefore: "considered to pose a significant risk to the environment or human health." For a high-risk site, the CoP indicates that a Tier 3 environmental risk analysis be undertaken including a Detailed Quantitative Risk Assessment. Further the site be regularised/authorised in accordance with current waste management legislation.

It is recommended by FTC that a Tier 3 DQRA be undertaken for the site in conjunction with an application for a Certificate of Registration for this site.

FT further recommended that further groundwater, surface water monitoring and landfill gas monitoring and analysis be undertaken at each monitoring location GW01 to GW03, SW1 and SW2 inclusive. The results of this analysis should be used to confirm the conclusion of the Tier 3 report and inform future works.

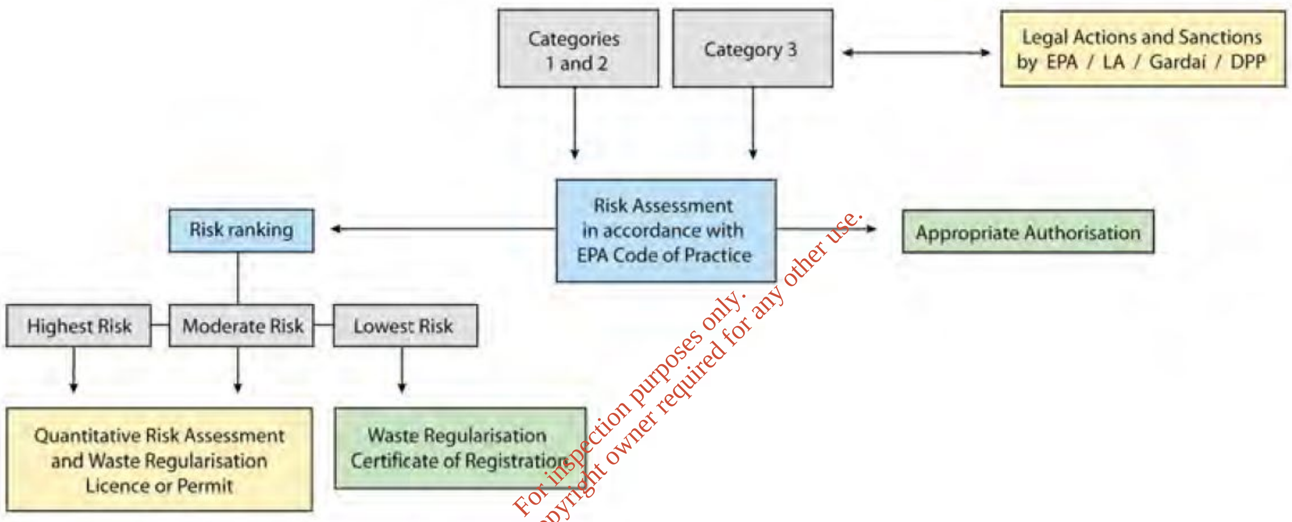

Figure 6-1: Extract from Section 1.3 of the EPA Code of Practice

Appendix I

Tier 1 Study

TIER 1 ENVIRONMENTAL RISK ASSESSMENT

HISTORIC LANDFILL AT KILLYCARD LANDFILL CO. MONAGHAN

APRIL 2020

FEHILY TIMONEY
30 YEARS

TIER 1 ENVIRONMENTAL RISK ASSESSMENT

HISTORIC LANDFILL AT KILLYCARD LANDFILL, CO. MONAGHAN

User is Responsible for Checking the Revision Status of This Document

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	Issue for Client Review	SM/MG	JON	BG	22.06.2018
1	Amended following EPA Review	AB/MG	JON	BG	07.04.2020

Client: Monaghan County Council

Keywords: Site Investigation, environmental risk assessment, waste, landfill, historic

Abstract: This report represents the findings of a Tier 1 risk assessment conducted at the historic landfill at Killycard Landfill, Co. Monaghan in accordance with the EPA Code of Practice on Environmental Risk Assessment for Unregulated Waste Disposal Sites.

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PREAMBLE

Fehily Timoney & Co. (FT) was appointed by Monaghan County Council (MCC) to complete a Tier 1 environmental risk assessment (ERA) of the existing environment in the historical landfill located in Killycard, Co. Monaghan. This ERA was carried out in accordance with the EPA Code of Practice (CoP) on ERA for Unregulated Waste Disposal Sites (2007).

The historic landfill is located approximately 1.7km to the North-West of Castleblayney Town on the R-183 Castleblayney to Ballybay Regional Road. The historic site covers approximately 2.0 hectares.

A Tier 1 assessment was conducted by FT which included a detailed desk study and site walkover. The ERA concluded that a **high-risk classification (Class A) can be assigned to the site**.

A Tier 2 quantitative risk assessment is required for a site which is classified as high risk. FT recommend further intrusive site investigations and sampling as part of the Tier 2 assessment.

For a high-risk site, the CoP directs that the site will have to apply for a waste regularisation licence or permit through an administrative system, which will be established for the purpose in the context of Section 22 of the Waste Management Acts, 1996 to 2005.

1. INTRODUCTION

1.1. Background

Killycard historic landfill is located approximately 1.7km to the North-West of Castleblayney town on the R183 Castleblayney to Ballybay Regional Road. The landfill ceased operations in 1987.

The site is approximately 2.0 hectares in size. There are dwelling houses within 50 metres of the site boundary. Commercial developments have been constructed on site including mushroom houses (now derelict) and a number of warehouses. The western portion of the site shares a boundary with Corrinshigo lake. Since its closure the site has been covered with a soil cap, no other remediation works have been carried out. The exact quantity of waste deposited on site is unknown however MCC have estimated the quantity to be in the region of 30,000 cubic metres.

MCC requested that an ERA be carried out for the site in accordance with the EPA CoP on ERA for Unregulated Waste Disposal Sites.

1.2. Scope of Works and Project Objectives

The scope of work was to undertake a Tier 1 assessment of the site based on the risk assessment methodology approach, in accordance with the EPA CoP. This approach requires the carrying out of a:

- Desktop Study
- Detailed Site Walkover
- Environmental Risk Assessment (ERA)
- Development of Conceptual Site Model (CSM)

1.2.1. Project Objectives

As part of the initial desk study a preliminary assessment of available information was undertaken. This was followed-up with a site walkover. The desk study and site walk-over were used to inform the development of both the preliminary conceptual site model (CSM) and the ERA.

This report presents the findings of the assessment.

2. METHODOLOGY

2.1. Introduction

A desktop review of available documentation for the site was conducted and a visit was undertaken to carry out a detailed site walkover on 12th June 2018.

The documentation made available to FT for the desktop review included:

- Ordnance Survey of Ireland (OSI), www.osi.ie
- Geological Survey of Ireland (GSI), www.gsi.ie
- EPA http://gis.epa.ie/Envision
- Office of Public Works (OPW), http://www.opw.ie/hydro/index.asp?mpg=main.asp
- Water Maps, http://watermaps.wfdireland.ie
- Monaghan County Council Site Plans and Drawings

2.2. Desk Study

This section of the report presents the findings of the desk study.

2.2.1. Site Description and On-Site Conditions

The landfill is located within a primarily rural setting in an area of rolling topography dominated by drumlins. Areas between the drumlins are often boggy at lower elevations while more free-draining ground is found on the drumlins themselves. The land use in the area is primarily agricultural with the site currently used for pasture and poultry production. The site is bounded to the north by agricultural land, to the west by Corrinshigo lake and to the east and south by farmland and farm buildings.

2.2.2 Existing Bedrock Geology

According to the GSI the site and surrounding area is underlain by the Silurian Oghill formation (OL) which is generally made up of

> *'grey to grey-green massive sandstone (greywacke), microconglomerate and amalgamated beds with subordinate thin to thick-bedded greywacke and locally, at least partly, in faulted dark grey or black pyritic, occasionally graptolitic shale-mudstone'*.

The GSI bedrock geology map shows a fault travelling north-south across the eastern area of the site.

2.2.3 Existing Overburden Geology

The landfill site is underlain by cut over raised peat overlying a poorly productive bedrock aquifer. The subsoils are typically of cutover/cutaway peat. According to the GSI, the glacial overburden is mapped as 'Cut over raised peat', as shown in Figure 2.3.

Map Path: R:\Map Production\2018\P1655\Workspace\Killycard Landfill\P1655_Fig2-1_SiteLocation_A3.mxd

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
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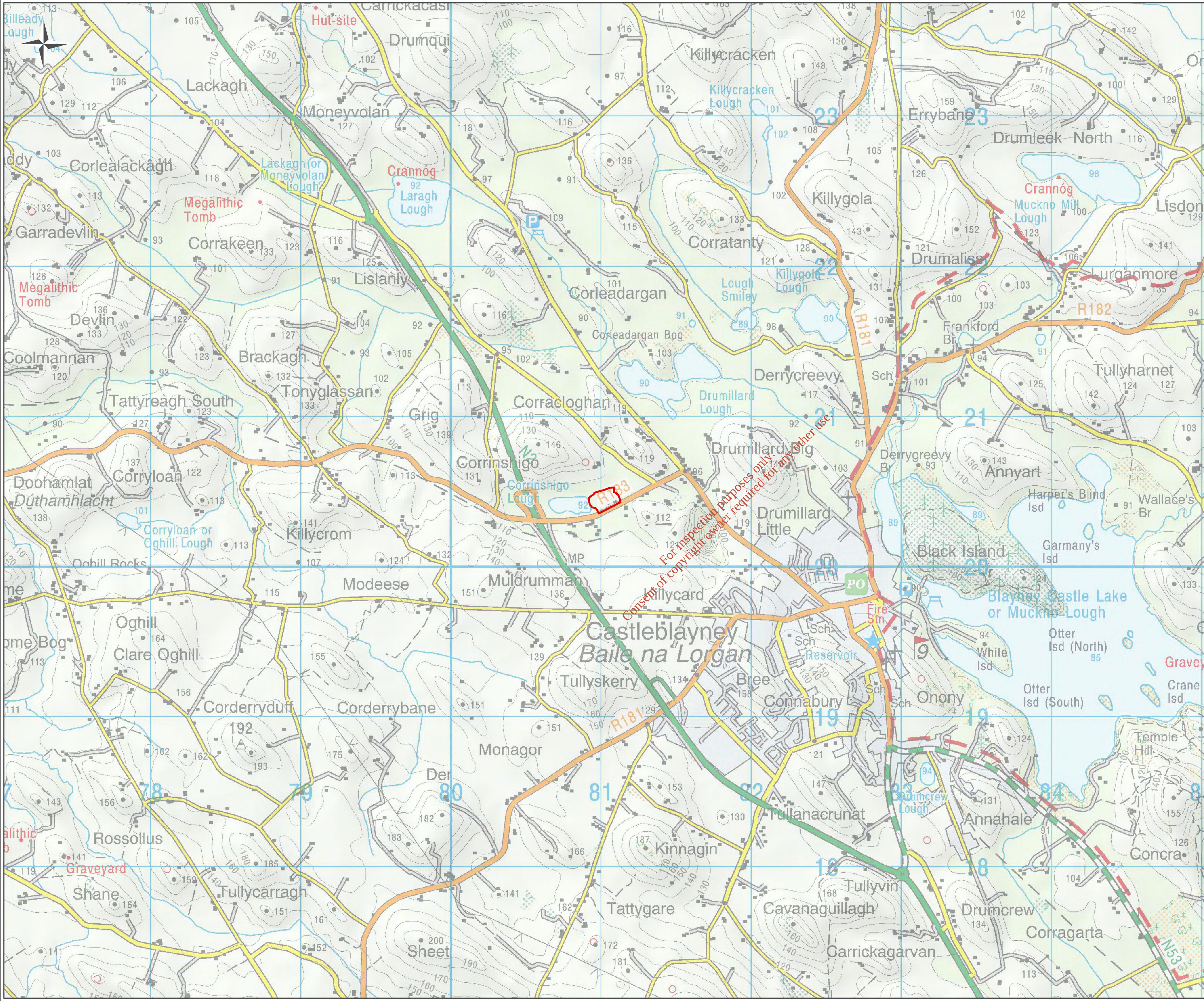

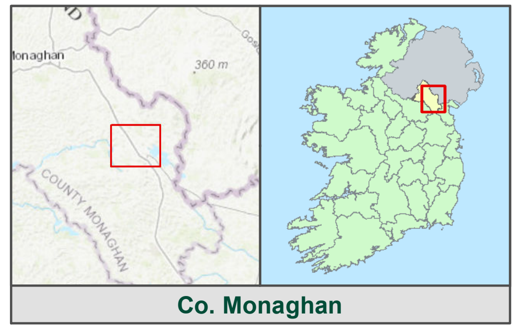

Legend

Site Boundary

Figure Title	Site Location Killycard
Figure No.	2.1
Project	Tier 1 Assessment of Historical Landfills in Monaghan
Client	Monaghan County Council
Scale	1:25,000
Page Size	A3
Revision	A
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0 0.5 1 2 Kilometers

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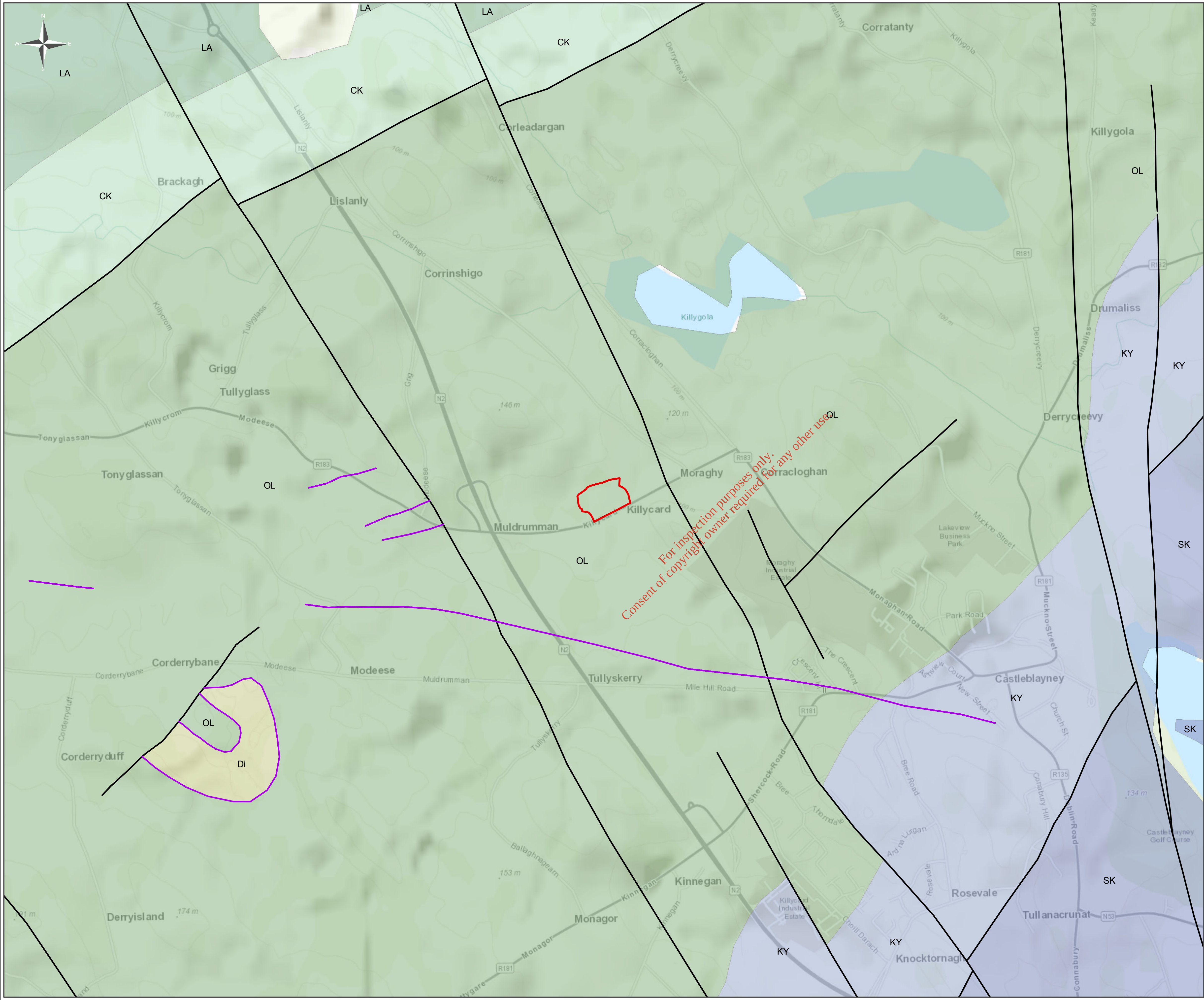

Co. Monaghan

Legend

- Site Boundary
- Dip of Bedding in Degrees
- Stratigraphical Linework
- Structural Linework

Bedrock Geology

- CK: Carrickatee Formation
- Di: Diorite
- KY: Kehernaghkilly Formation
- LA: Lough Avaghon
- OL: Oghill Formation
- SK: Shercock Formation

Figure Title	Bedrock Geology Killycard
Figure No.	2.2
Project	Tier 1 Assessment of Historical Landfills in Monaghan
Client	Monaghan County Council
Scale 1:15,000	**Page Size** A3
Revision A	**Date** 15/06/2018

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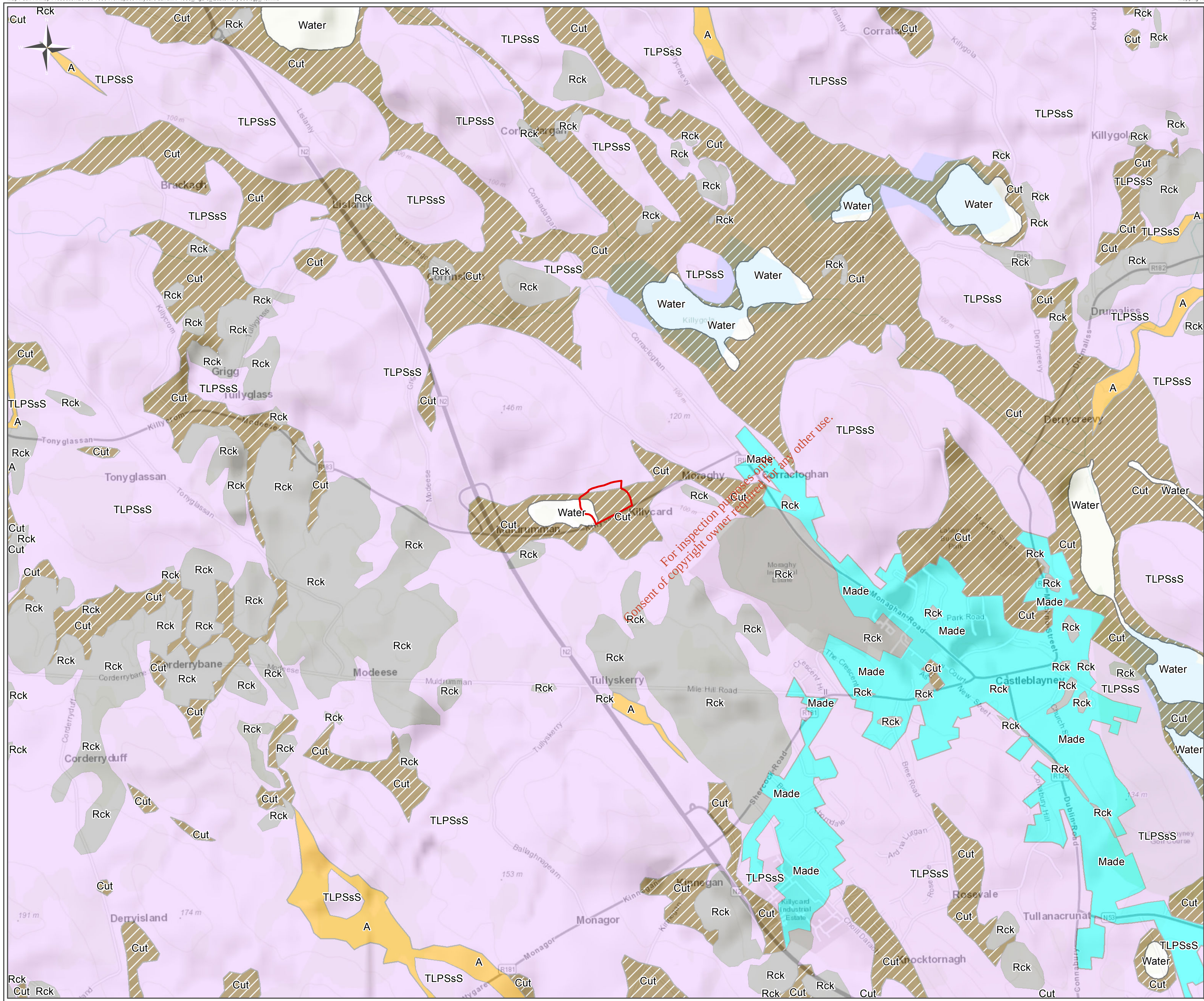

0 | 0.5 | 1 | 2 Kilometers

Co. Monaghan

Legend

- Site Boundary

Subsoils Data

- A, alluvium
- Cut, cutover peat
- Made, made ground
- Rck, bedrock at surface
- TLPSsS, sanstone and shales till - Lower Paleozoic
- Water, water

Figure Title	Quaternary Geology Killycard
Figure No.	2.3
Project	Tier 1 Assessment of Historical Landfills in Monaghan
Client	Monaghan County Council
Scale	1:15,000
Page Size	A3
Revision	A
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2.2.4 Hydrogeology

The site lies within the Louth Groundwater Body (GWB No. IEGBNI_NB_G_019) which is defined as being at *Good Status* under the Water Framework Directive.

There are no karst landforms within the site boundary. The nearest karst landform is a series of enclosed depressions approximately 10.8km south of the site boundary.

The GSI national recharge map defined the annual recharge as 100mm/yr. The effective rainfall for the area is 654mm/yr, indicating the recharge coefficient is 22.5%, which implies the majority of available recharge runs off due to a shallow water table in the subsoil that results from the low permeability of the bedrock aquifer. This will result in flashy streams with reduced baseflow.

Historical mapping for the area shows a number of springs in the surrounding area. There are a number of residences within 250m of the site where it is likely that unregistered private wells may be present. There are no public groundwater supplies and no groundwater dependent ecosystems in the area. Locations of wells and springs are presented in Figure 2.5.

Table 2.1: Distance of wells and springs from the Site

BH/Spring	Yield class	Yield	Use	Depth (m)	Depth to Rock confidence (m)	Distance from site (km)	Date
2631NEW002	Poor	34.6	--	28.0	6.0	0.32	1899
2631NEW091	Poor	13.1	--	4.3	1.2	<1	1899
2631NEW078	Poor	10.9	--	6.1	1.2	<1	1969
2631NEW084	Poor	9.8	--	2.4	0.3	<1	1971
2631NEW087	Poor	10.9	--	4.6	1.2	<1	1970
2631SEW009	Poor	16.4	--	7.3	--	<1	1899
2631NEW040	Poor	32.7	--	16.2	3.1	<1	1970

There are no Groundwater Drinking Water Protection Areas within the site boundaries, according to GSI. The closest groundwater protection area to the sites is the Monaghan Town outer protection areas, approximately 18km north-west of the site boundary. The outer protection area is 3.76 km^2.

2.2.5 Groundwater Vulnerability

Groundwater vulnerability, as defined by the GSI, is the term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater could be contaminated by human activities.

The vulnerability of an aquifer to contamination is influenced by the leaching characteristics of the topsoil, the permeability and thickness of the subsoil, the presence of an unsaturated zone, the type of aquifer, and the amount and form of recharge (the hydrologic process where water moves downward from surface water to groundwater).

Groundwater vulnerability is determined mainly according to the thickness and permeability of the subsoil that underlies the topsoil, as both properties strongly influence the travel times and attenuation processes of contaminants that could be released into the subsurface from below the topsoil.

The Oghill formation is classified as a Poor Aquifer (Pl) that is generally unproductive except in local zones. The aquifer vulnerability of the site is Extreme.

The groundwater vulnerability for the site is presented in Table 2.2. This table outlines the standard ratings of vulnerability used by the GSI, with the existing site conditions highlighted based on the findings of the site investigations.

Table 2.2: Groundwater Vulnerability

Vulnerability Rating	Hydrogeological Conditions		
	Subsoil Permeability (Type) and Thickness		
	High Permeability (sand/gravel)	Moderate Permeability (sandy soil)	Low Permeability (clayey subsoil, clay, peat)
Extreme (E)	0 - 3.0 m	0 - 3.0 m	**0 - 3.0 m**
High (H)	> 3.0 m	3.0 -10.0 m	3.0 - 5.0 m
Moderate (M)	N/A	>10.0 m	5.0 - 10.0 m
Low (L)	N/A	N/A	>10 m

Notes: 1. N/A = not applicable.
2. Precise permeability values cannot be given at present.

2.2.6 Hydrology

The site is located within the Newry, Fane, Glyde and Dee catchments and the sub-catchment of River Fane. The site is bounded to the southwest by the source stream for Corrinshigo Lough, to the west by Corrinshigo Lough itself and to the north by the lake outlet stream. Carrickaslane Lough stream and Devlin streamline northeast of the site and are tributaries of the River Fane.

There are several small lakes located in the vicinity of the site. Drumillard Lough is located approximately 0.6km to the northeast of the site while an unnamed surface water area located approximately 0.5km to the east of the site. Killygola Lough and Lough Smiley are located approximately 1km northeast of the site.

2.2.7 Existing Geological Heritage

The GSI holds no records of areas of Geological Heritage within the site boundary or in the immediate vicinity of the site.

The nearest recorded of geological heritage held by the GSI is approximately 5.8km north of the site boundary at Tassan. Tassan is described as *"the largest and most productive of the Monaghan district lead mines, from c. 1840-1866"* and the geological feature of note is a *"good mixture of extant mine features, including mine buildings and solid waste".*

2.2.8 Existing Geotechnical Stability

The GSI landslides database indicates that the nearest recorded geo-hazard was at Carrowmaculla, Lisnaskea Co. Fermanagh (ITM 643496 835192) in 1979, approximately 40 km west of the site boundary.

According to the GSI, the site and surrounding area is underlain by cutaway blanket peat.

2.2.9 Site History

OSI Historic Map (1888-1913 and 1837-1842) identifies that the land within the site boundary and the surrounding area was previously 'Bog or uncultivated land'. The historic map of the site is shown in Figure 2.4 below.

Figure 2.3.1:OSI Site Historic Map

2.2.10 Ecology

The site is not within or directly adjacent to any Natural Heritage Area (NHA), proposed NHA (pNHA), Special Area of Conservation (SAC) or Special Protection Area (SPA). However, the following SACs and SPAs are located within the vicinity of the site. A number of these are also listed as pNHAs:

Lough Smiley proposed NHA (pNHA) lies approximately 0.5km northeast of the site. Muchno Lake NHA lies approximately 1.6km east of the site.

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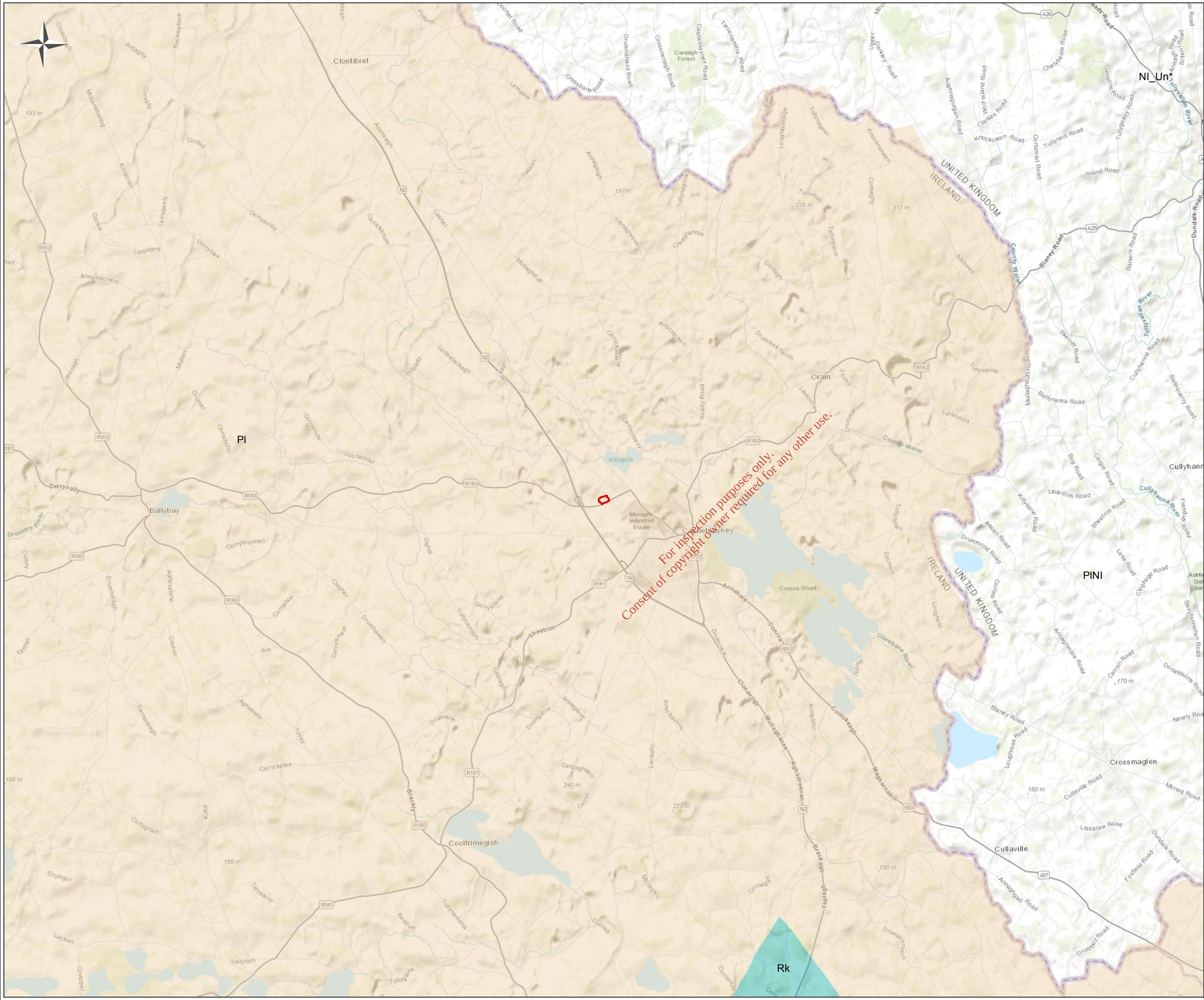

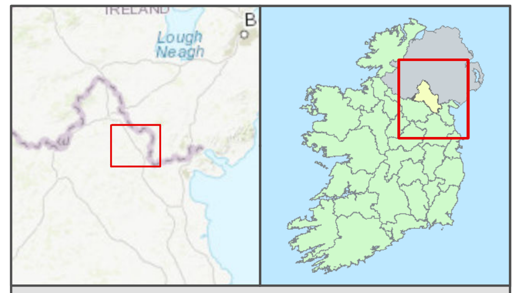

Co. Monaghan

Legend

- Site Boundary
- Pl: Poor Aquifer Bedrock Generally Unproductive Except Locally
- Rk: Regionally Important Aquifer - Karstified

Figure Title	Aquifer Classification Killycard
Figure No.	2.4
Project	Tier 1 Assessment of Historical Landfills in Monaghan
Client	Monaghan County Council
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0 0.5 1 2 Kilometers

Map Path: R:\Map Production\2018\P1655\Workspace\Killycard Landfill\P1655_Fig2-5_GroundwaterVulnerability_A3.mxd

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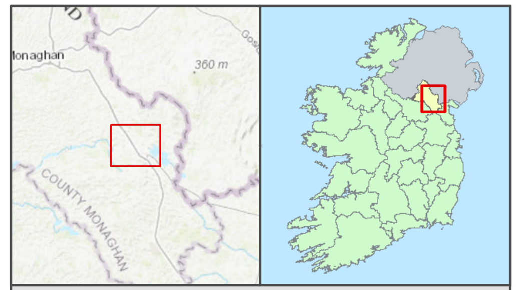

Co. Monaghan

Legend

Site Boundary

Groundwater Vulnerability

- E - Extreme
- H - High
- M - Moderate
- L - Low
- Water
- X (Rock Near Surface or Karst)

Figure Title	Groundwater Vulnerability Killycard
Figure No.	2.5
Project	Tier 1 Assessment of Historical Landfills in Monaghan
Client	Monaghan County Council
Scale	1:25,000
Page Size	A3
Revision	A
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