



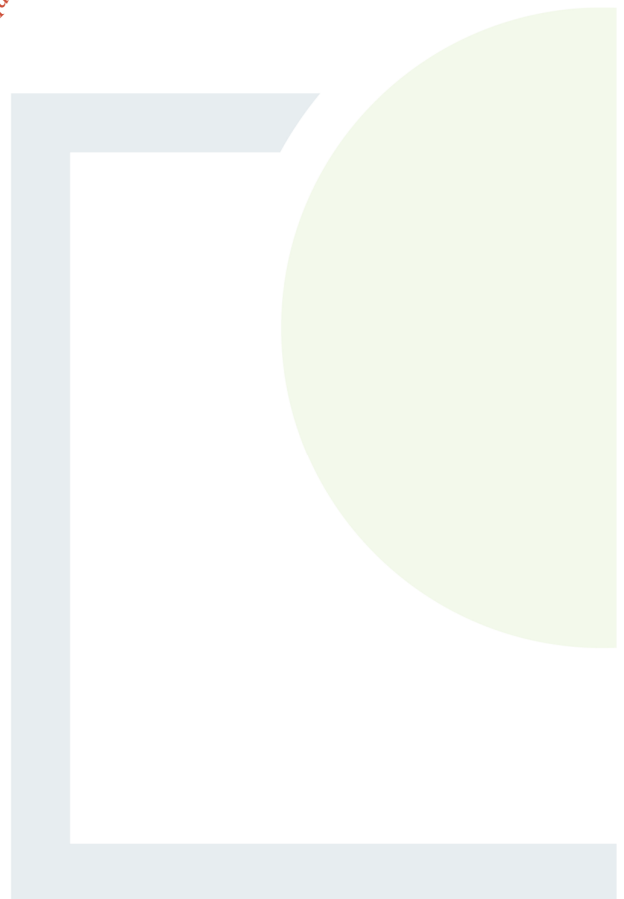
**FEHILY  
TIMONEY**

**CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE & PLANNING**

# **APPENDIX 1**

**Tier 1 Study**

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*Comhairle Contae Chiarraí*

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*Kerry County Council*

**► Tier 1 Review Report – Ahascra, Lisselton ◀**

**S22 - 02664**

November 2013

*Prepared by:*

*Environmental Services,  
Kerry County Council.*

*Seirbhísí Comhshaoil,  
Comhairle Contae Chiarraí.*

## 1.0 Contents.

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## **2.0 Introduction.**

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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 S22-02656. It was assigned a Moderate Risk (Class B) classification.

A copy of the assessment is included in Attachment 6.4 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**

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### **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 Attachment 6.1.

### **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

### 3.4 Walk Over Survey.

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

The results have been recorded in Attachment 6.1 and the allocation of scores to the Risk Prioritisation exercise has been amended accordingly.

Typical photographs of the site are included in Attachment 6.2.

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## 4.0 Site Summary.

### 4.1 Location.

The unregulated closed site is located in the townland of Ahascra, Lisselton.

The site is bounded to the south by a local tertiary road and on all sides by agricultural and bog lands.

The site is known as Ahascra landfill.

### Site Location



### 4.2 Site Layout and extent of waste.

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

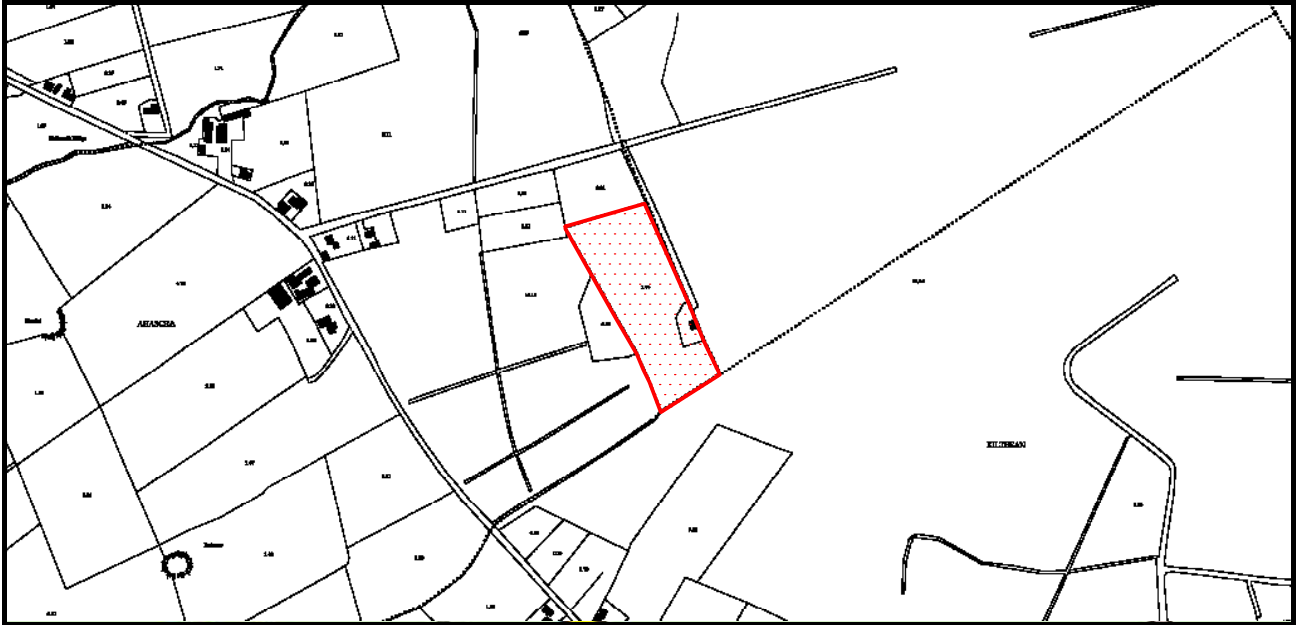
The extent is therefore taken as the full area of the property holding in which the activity took place which is approximately 2.65Ha.

The grid reference to the approximate centre of the property holding is 91,150/136,496.

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

The site is in the ownership of Kerry County Council Folio 22510F (details on file).

Site Layout



Waste activities had ceased before the completion of the 1998 Waste Management Plan for Kerry.

The An Foras Forbartha report on National Database on Waste indicates an annual intake of 1,638 tonnes and 4 years remaining capacity in 1986.

Based on the above this score is used in the Risk Assessment	Table 1A and 1B	Score 7
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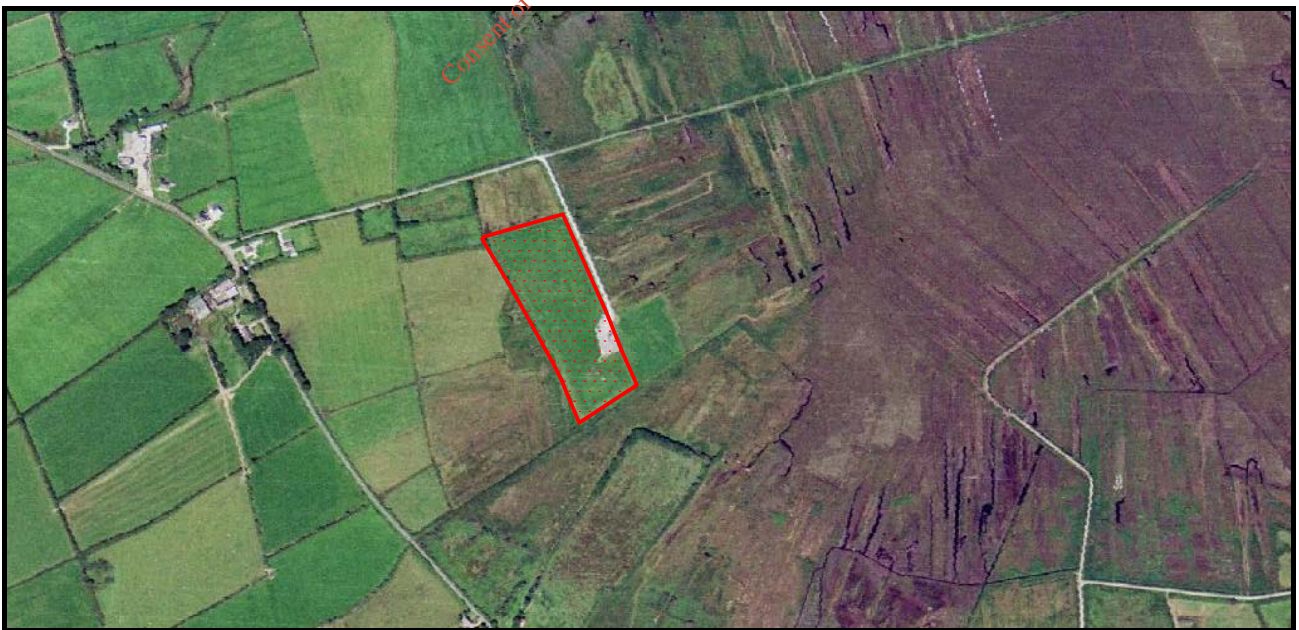
### 4.3 Available Aerial photography

There are a number of sets of available aerial photography from 1995 to 2004. These are presented in the following pages

#### Aerial Photography - 2004



#### Aerial Photography - 2000





Aerial Photography - 1995



Aerial Photography – Year unknown (source GSI).

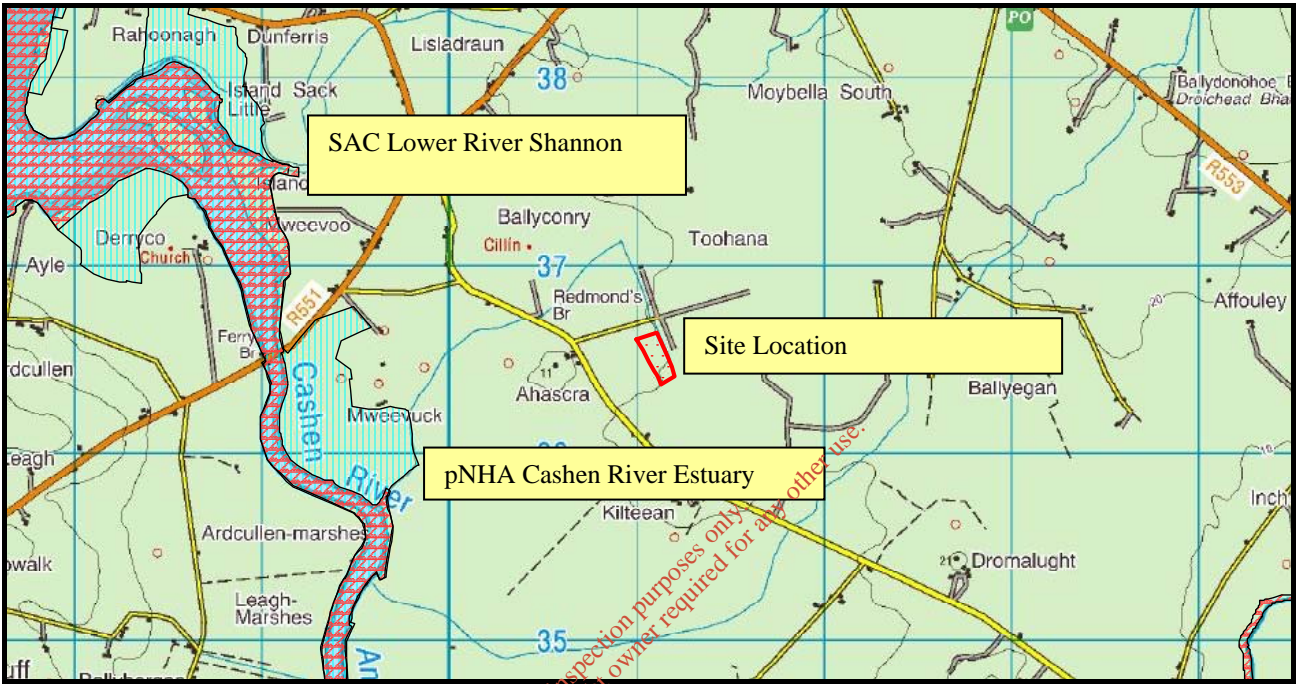


4.4 Designated Sites

The site is 1.26 km east of the proposed NHA for the Cashen River Estuary which is to large part co-incident with the Lower River Shannon SAC. The closest point to the SAC is 1.5km.

The designation is current to September 2011.

Designated Sites



Based on the above this score is used in the Risk Assessment	Table 3B	Score 0
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4.5 Water Resources

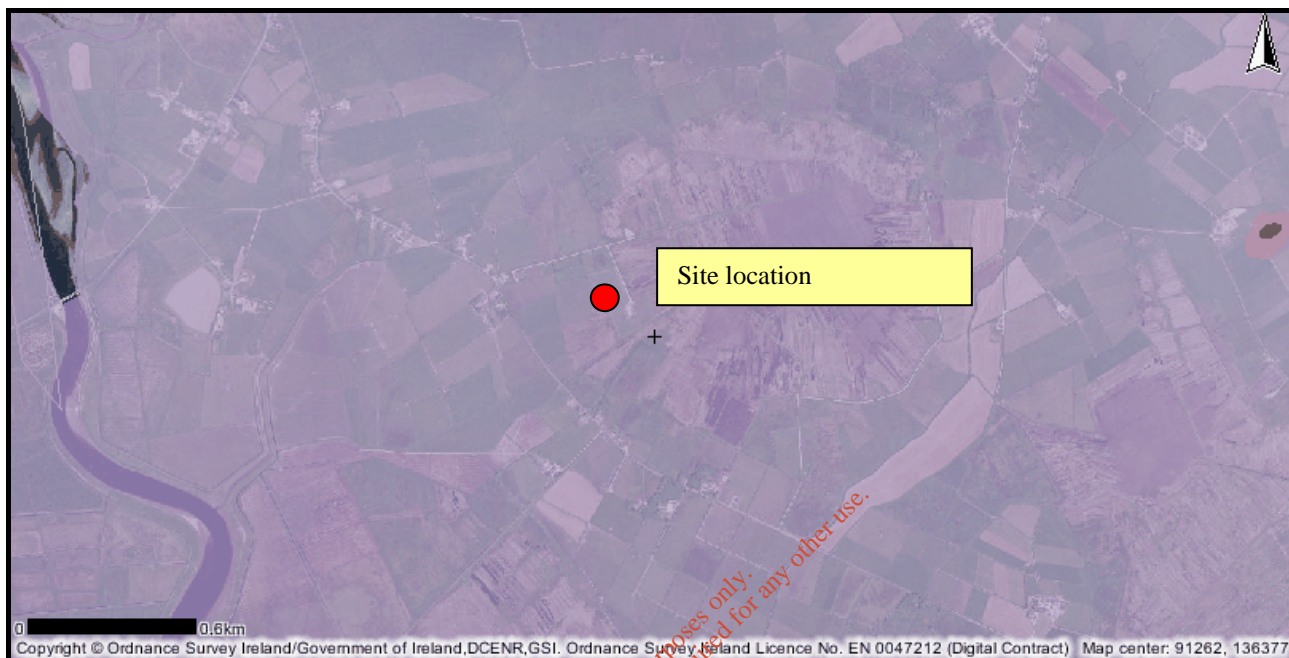
The site is not located within or close to any Source Protection Area. It is 3.6 km from the edge of the nearest buffer zone.



Based on the above this score is used in the Risk Assessment	Table 3D	Score 3
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4.6 Groundwater vulnerability and aquifer

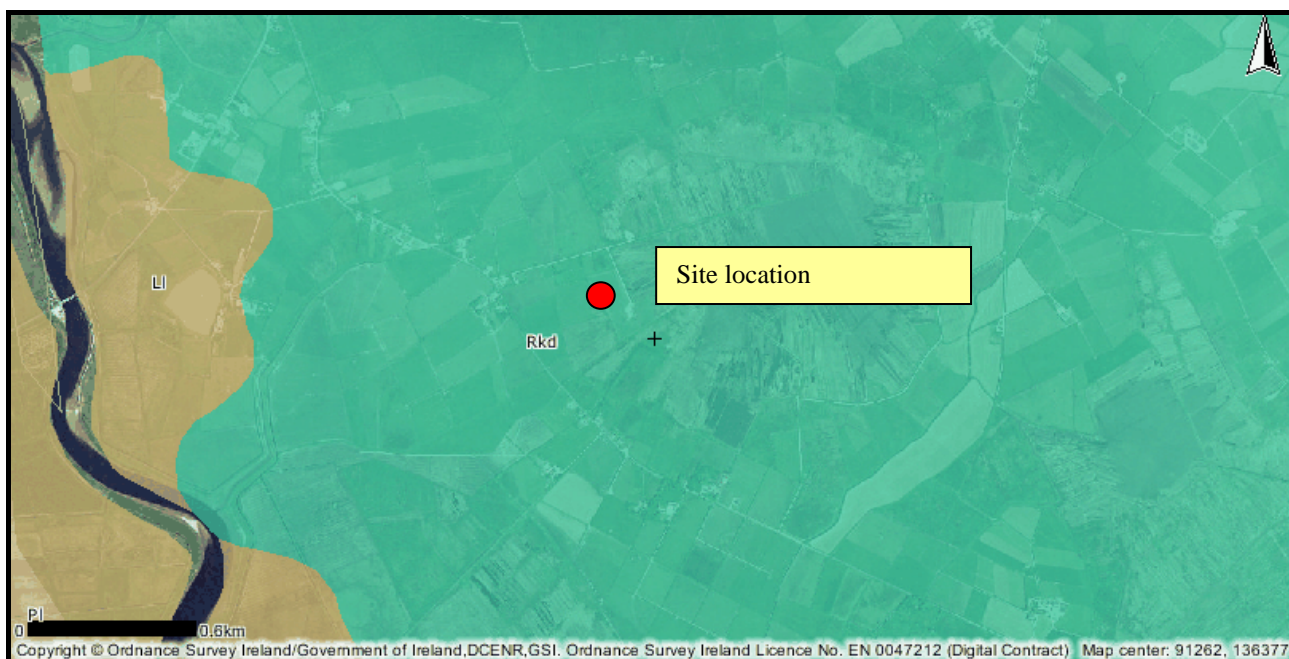
Groundwater Vulnerability



The site is located in an area that is no definitive designation (HL) – it is entered as High Vulnerability.

Based on the above this score is used in the Risk Assessment	Table 2A	Score 2
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Aquifer Status

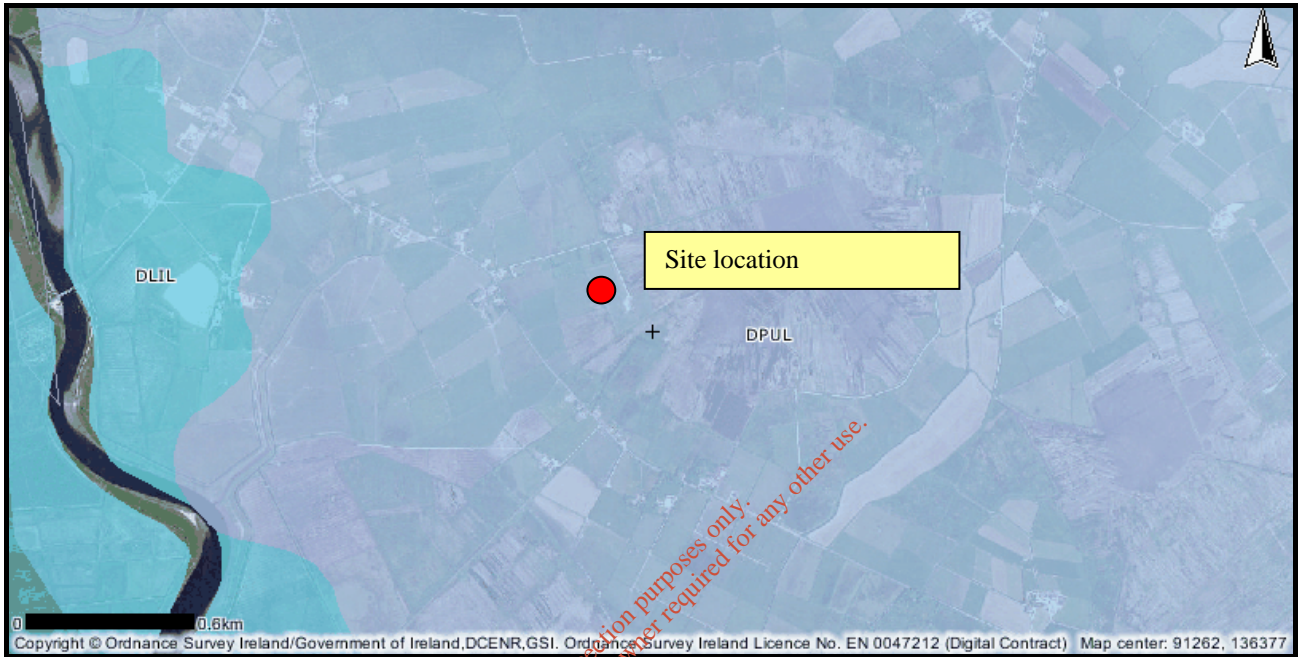


The Rkd status implies that the bedrock aquifer is a regionally important karstified aquifer.

Based on the above this score is used in the Risk Assessment	Table 3C	Score 5
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Based on the above this score is used in the Risk Assessment	Table 2B	Score 5
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Bedrock Geology



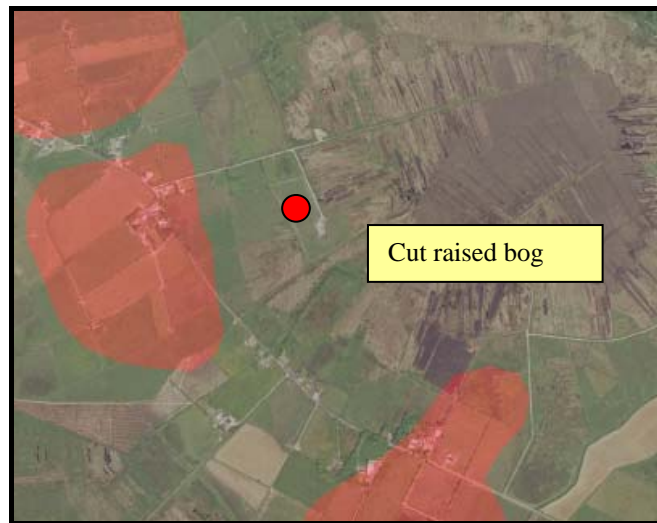
4.7 Surface water.

There is a ditch draining to a watercourse to the south east – the ditch bounds the site, the watercourse is within 50m from the site. Designation for 3E is being prudently set at 1.

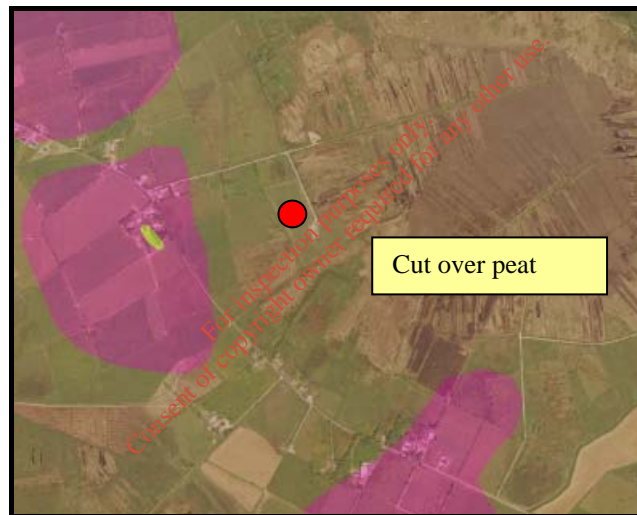
Based on the above this score is used in the Risk Assessment	Table 2C	Score 2
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Based on the above this score is used in the Risk Assessment	Table 3E	Score 1
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### Soil Types



### Sub-soil Categorisation



### 4.8 Landfill Gas

Reference to the location map and site inspection indicates that the closest domestic dwellings is approximately 200 m from the site.

There is no dwelling above the footprint of the waste.

Based on the above this score is used in the Risk Assessment	Table 2D	Score 1
Based on the above this score is used in the Risk Assessment	Table 2E	Score 1
Based on the above this score is used in the Risk Assessment	Table 3A	Score 2
Based on the above this score is used in the Risk Assessment	Table 3F	Score 3

## 5.0 Conclusions.

### 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

<b>Table</b>	<b>Description</b>	<b>Score</b>
Source	1A Leachate; source/hazard scoring matrix	7.0
	1B Landfill gas; source/hazard scoring matrix	7.0
Pathway	2A Leachate migration; pathways (gw vulnerability)	2.0
	2B Leachate migration; pathways (gw flow)	5.0
	2C Leachate migration; pathways (sw pathway)	2.0
	2D Landfill gas; lateral migration	1.0
	2E Landfill gas; upward migration	1.0
Receptor	3A Leachate migration; receptors, human	2.0
	3B Leachate migration; receptors, protected areas	0.0
	3C Leachate migration; receptors, aquifers	5.0
	3D Leachate migration; receptors, public water supply	3.0
	3E Leachate migration; receptors, surface water	1.0
	3F Landfill gas; receptor, human presence	3.0

#### Summary of SPR Linkages.

		<b>SPR score</b>	<b>Max</b>	<b>Normalised</b>	<b>Risk</b>
SPR 1	1a * (2a + 2b + 2c) * 3e	63	300	21%	LOW
SPR 2	1a * (2a + 2b + 2c) * 3b	0	300	0%	LOW
SPR 3	1a * (2a + 2b) * 3a	98	240	41%	MODERATE
SPR 4	1a * (2a + 2b) * 3b	0	240	0%	LOW
SPR 5	1a * (2a + 2b) * 3c	245	400	61%	MODERATE
SPR 6	1a * (2a + 2b) * 3d	147	560	26%	LOW
SPR 7	1a * (2a + 2b) * 3e	49	240	20%	LOW
SPR 8	1a * 2c * 3e	14	60	23%	LOW
SPR 9	1a * 2c * 3b	0	60	0%	LOW
SPR 10	1b * 2d * 3f	21	150	14%	LOW
SPR 11	1b * 2e * 3f	21	250	8%	LOW

Based on the above assessment this is a MODERATE RISK CLASS B Site

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

## 6.0 Attachments

- 6.1 Risk Screening, Information Sources and Walk Over Survey
- 6.2 Typical Photographs (walk over survey, 2013)
- 6.3 Risk Assessment 2007

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**Site Reference****S22 - 02664****Ahascra****1. Site Information check list**

Authorisation	None - registered on EPA Section 22 website as 02664
Site Name	Ahascra
Address of townland	Ahascra
Address 1	Lisselton
County	Kerry
LA functional area	Kerry County Coucil
Location Map	Yes
Easting	91150
Northing	136496
Source of information	
Owner/occupier	Kerry County Council - Part of Folio 225105
Waste activity	Municipal
Estimated tonnage of waste	
Hazardous waste present or unknown	Unknown
Verificatin method	None
Known Impacts	None visible as per walk over survey
Year opened	
Year closed	estimated at 1990 based on known remaining capacity in 1986
Status	Closed
Containment, total/partial/none	Partial capping
Containment, base liner	None
Containment, capping	Temporary cover material
LFG management	None - passive
Leachate collection	None
Vector map reference	

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## 2. Sources of information check list

Local authority sources	Yes
LA records and knowledge	Yes
Section 22 register (existing)	Yes
Waste Plans	Yes
Special Waste Plans	
Section 55 notices	
Section 18 notices	
Complaints database (LA, EPA)	
LA permit register	
Toxic and Dangerous waste register	
Waste oils register	
Derelict buildings register	
Planning files	
LA quarries register	
EPA sources	Yes
EPA waste reports (incl NWD report)	Yes
EPA IPPC facilities	
EPA waste licenced faciiltes	
IPPC reports	
EPA applicant files	
Other sources	
An Foras Forbatha reports	Yes
Trade directories	
GSI quarries directory	Yes
Aerial photopgraphy	Yes
Remote sensing	
Aerial survey	
Newspaper advertisement	

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<b><i>Walkover Survey Checklist</i></b>	<b><i>Comment</i></b>
Site	Ahascra
What is current landuse	Agricultural use - pasture
What are the neighbouring land uses	Bogland and agricultural
What is the size of the site	2.65Ha
What is the topography	Undulating with falls to boundary drainage ditches
Are there potential receptors (if yes - details)	Yes
Houses	1 No
Surface water features (if yes distance and direction of flow)	Boundary drainage ditches connected to drainage runs within adjoining lands and bogland
Any wetland or protected area	Yes - SAC Lower Shannon and PNHA Cashen River Estuary
Public water supplies	
Private wells	
Services	None on site
Other buildings	None on site
Other	
Are there any potential sources of contamination (if yes give details)	Yes
Surface waste (if yes what type)	Drainage ditches for low lying lands
Surface ponding of leachate	None visible, water was ponding on surface but weather was very wet - no sign of vegetative die back
Leachate seepage	None visible
Landfill gas odours	None - passive gas wells installed - very slight odour at vent cowl, none at 300mm
Are there any outfalls to surface water	Direct surface flow to surface water ditches

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Are there any signs of impact on the environment (if yes take photographic evidence)	
Vegetation die off, bare ground	None
Leachate seepage	None
Odours	None
Litter	None
Gas bubbling through water	None
Signs of settlement, subsidence water logged areas	Two small areas approx 2 to 3m in diameter
Drainage or hydraulic issues	None
Downstream water quality appears poorer than upstream water quality	No noticeable effect
Are there any indications of remedial measures (provide details)	Yes
Capping	Yes, capped and profiled to facilitate drainage
Landfill gas collection	Yes, passive vents
Leachate collection	No evidence
Describe fences and security features (if any)	Reasonable integrity - overgrown in places, galvaised chain link and post and rail
Any other relevant information	
Site name and reference;	Ahascra, S22 02664
Date of inspection;	October 25th 2013
Walk over survey by;	Conor Culloo

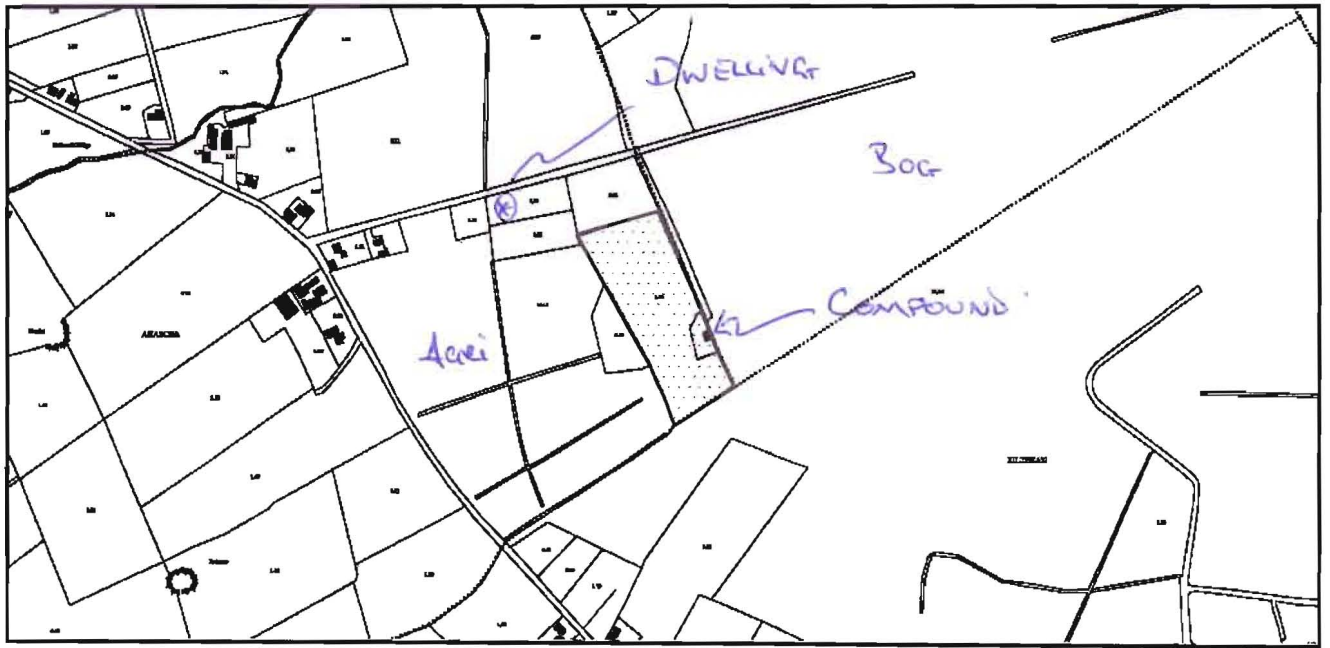
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**SPR Linkages - Risk Screening**

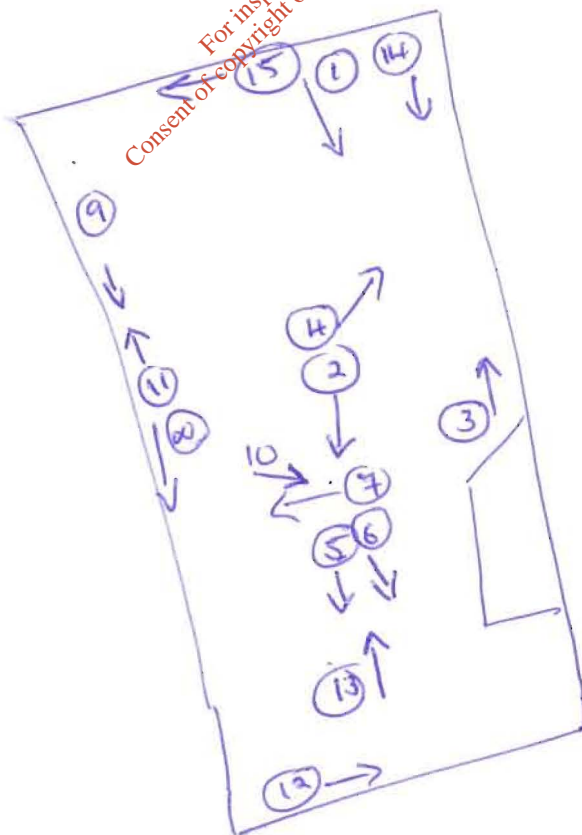
Table	Description	Score	SPR	Max	Normalised	Risk		
1A	Leachate; source/hazard scoring matrix	7.0	SPR 1	1a * (2a + 2b + 2c) *	63	300	21%	LOW
1B	Landfill gas; source/hazard scoring matrix	7.0	SPR 2	1a * (2a + 2b + 2c) *	0	300	0%	LOW
			SPR 3	1a * (2a + 2b) * 3a	98	240	41%	MODERATE
2A	Leachate migration; pathways (gw vulnerability)	2.0	SPR 4	1a * (2a + 2b) * 3b	0	240	0%	LOW
2B	Leachate migration; pathways (gw flow)	5.0	SPR 5	1a * (2a + 2b) * 3c	245	400	61%	MODERATE
2C	Leachate migration; pathways (sw pathway)	2.0	SPR 6	1a * (2a + 2b) * 3d	147	560	26%	LOW
2D	Landfill gas; lateral migration	1.0	SPR 7	1a * (2a + 2b) * 3e	49	240	20%	LOW
2E	Landfill gas; upward migration	1.0	SPR 8	1a * 2c * 3e	14	60	23%	LOW
			SPR 9	1a * 2c * 3b	0	60	0%	LOW
3A	Leachate migration; receptors, human	2.0	SPR 10	1b * 2d * 3f	21	150	14%	LOW
3B	Leachate migration; receptors, protected areas	0.0	SPR 11	1b * 2e * 3f	21	250	8%	LOW
3C	Leachate migration; receptors, aquifers	5.0						
3D	Leachate migration; receptors, public water supply	3.0						
3E	Leachate migration; receptors, surface water	1.0						
3F	Landfill gas; receptor, human presence	3.0						

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ROUGH LOCATION OF PHOTOS.



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Photo No 1



Photo No 2



Photo No 3



Photo No 4





Photo No 5



Photo No 6



Photo No. 7



Photo No 8



Photo No. 9



Photo No 10



Photo No 11



Photo No 12



Photo No 13



Photo No 14



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Photo No 15

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2007 Data

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## AHASCRA

### Environmental risk assessment for unregulated waste disposal sites

	<u>SPR linkage score</u>	<u>Maximum linkage score</u>	<u>Normalised score %</u>
SPR1	189	300	63.00
SPR2	0	300	0.00
SPR3	98	240	40.83
SPR4	0	240	0.00
SPR5	245	400	61.25
SPR6	147	560	26.25
SPR7	147	240	61.25
SPR8	42	60	70.00
SPR9	0	60	0.00
SPR10	21	150	14.00
SPR11	0	250	0.00

<u>Table no.</u>	<u>Score</u>	<u>Rationale</u>
Table 1a, Leachate hazard	7	Municipal waste >1 <5 ha
Table 1b, Landfill gas hazard	7	Municipal waste >1 <5 ha
Table 2a, Leachate migration, GW vulnerability	2	High Vulnerability
Table 2b, Leachate migration, GW flow regime	5	Karstified Groundwater Bodies (Rk) GSI website
Table 2c, Leachate migration SW drainage	2	drainage ditches connection to SW body
Table 2d, Landfill gas Lateral migration	1	Peat as per Teagasc maps on GSI website
Table 2e, Landfill gas Vertical Migration	0	No structures present above waste body
Table 3a, Leachate migration Human presence	2	Dwelling house under construction approx 80m from site but according to planning application will connect to public water supply
Table 3b, Leachate migration Protected areas	0	Need confirmation from Duchas
Table 3c, Leachate migration Aquifer category	5	Regionally important Karst aquifer as per GSI website
Table 3d, Leachate migration Public water supplies	3	Public water source >1km karst aquifer
Table 3e, Leachate migration Surface water bodies	3	SW body within 50m of site boundary
Table 3f, Landfill gas Human presence	3	Human presence <150m

### Conclusion

High risk (class A) site as 1 SPR linkage is greater than or equal to 70%.

APPENDIX 2: Walkover Survey Checklist

Ahascra 91117  
136,507

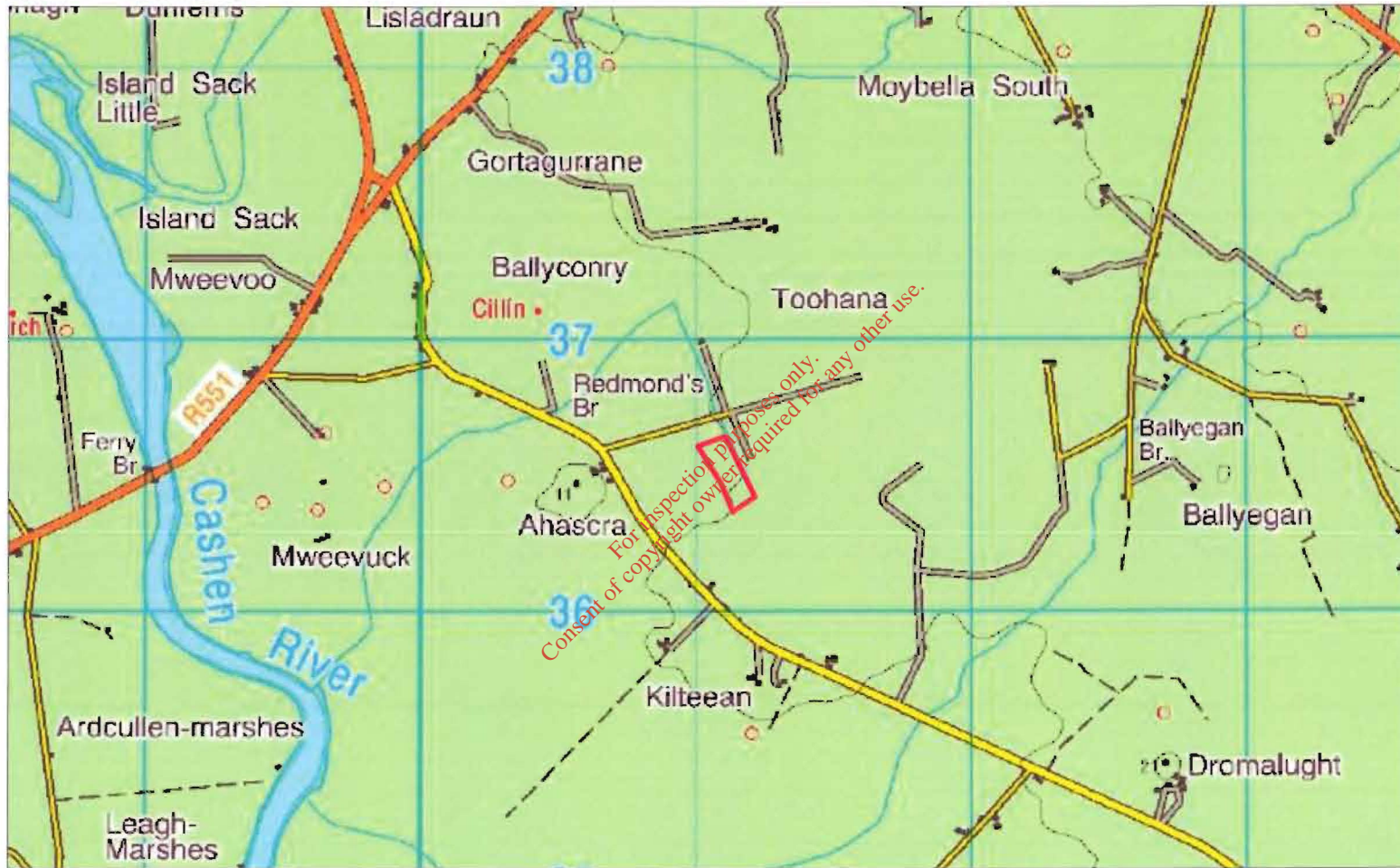
Walkover Survey Checklist		
Information	Checked	Comment (include distances from site boundary)
1. What is current Land Use?		Cattle grazing KCC burned
2. What are the neighbouring Land Uses?		grazing & turf harvesting
3. What is the size of the site?		2.2 Ha
4. What is the topography?		Dome shaped
5. Are there potential receptors (if yes, give details)?		
Houses	✓	90m from boundary of site (06/4254)
Surface water features (if yes, distance and direction of flow)	✓	Adjacent land drain to boundary
Any wetland or protected areas	✓	≈ 1.27km from NHA
Public Water Supplies		
Private Wells		
Services	✓	
Other buildings	✓	
Other	✓	
6. Are there any potential sources of contamination (if yes, give details)?		No samples taken.
Surface waste (if yes, what type?)	✓	None observed
Surface ponding of leachate	✓	None observed
Leachate seepage	✓	None observed
Landfill gas odours	✓	encountered
7. Are there any outfalls to surface water? (If yes, are there discharges and what is the nature of the discharge?)	✓	None observed
8. Are there any signs of impact on the environment? (If yes, take photographic evidence)		
Vegetation die off, bare ground	✓	possible, see photos 3418 → 3420
Leachate seepages	✓	
Odours	✓	
Litter	✓	
Gas bubbling through water	✓	
Signs of settlement,	✓	see photo no. 3408 & 3409

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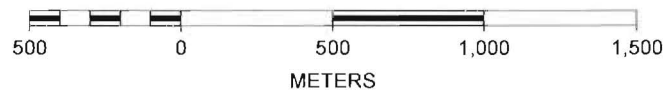
subsidence, water logged areas		
Drainage or hydraulic issues	✓	No
Downstream water quality appears poorer than upstream water quality	✓	No, but no sampling carried out.
9. Are there any indications of remedial measures? (Provide details)	✓	
Capping	✓	Good grass cover, no waste evident
Landfill gas collection	✓	
Leachate collection	✓	
gas wells	✓	6 wells observed.
10. Describe fences and security features (if any)	✓	76ft chain link fence on 3/4 of boundary, timber fence on remainder (see photos)
Any other relevant information?		
	✓	Sign of land drain from within landfill site to bogland, no outlet observed

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# Ahascra



SCALE 1 : 25,000



# Ahascra



SCALE 1 : 15,000





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