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ATTACHMENT B

NEWSPAPER NOTICE



APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE WATER DISCHARGE LICENCE

Meath County Council, County Hall, Railway Street, Navan, Co. Meath intends to apply to the Environmental Protection Agency for a Waste Water Discharge Licence for an existing discharge at the Wastewater Treatment Plant in the townland of **Tankardstown, Clonalvy**, County Meath (National Grid Reference 309,378E, 261,182N). The treatment process consists of septic tank with Bord Na Mona peat filters.

The application relates to the following discharge point:

The primary discharge point PSW1 – 309,375E, 261,203N (Receiving Water – Duleek Groundwater Body)

A copy of the following documents shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the headquarters of the Environmental Protection Agency, P.O. Box 3000, Johnstown Castle Estate, Co. Wexford and at Meath County Council, County Hall, Railway Street, Navan, Co. Meath

- (i) the application for a waste water discharge licence
- (ii) such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application.

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters at P.O. Box 3000, Johnstown Castle Estate, Co. Wexford.

News briefs

Charity concert

ST Peter's Male Voice Choir are holding a fundraising concert to support local organisation Malta Services Drogheda.

This year Malta Services celebrates 40 years in Drogheda and was set up as an offshoot of the local Order of Malta Ambulance Corps to meet a need for a local service for people with learning disabilities.

Initially developed on a voluntary basis, the organisation has grown and developed its day care and training services over the years, now catering for over 80 service users.

The concert will take place on Thursday, December 17th, in St Peter's Church, William Street Drogheda.

HSE clarification

FURTHER to the article published in last week's *Drogheda Independent*, the HSE would like to point out that since November 1st, embalming services are not provided in any of the three hospitals in the Louth Meath Hospital Group.

We would like to clarify that the embalming service has not been moved to Our Lady of Lourdes Hospital, Drogheda.

Funeral directors will still be able to use the hospital's mortuary chapel for removal of remains, as is current practice.

Embalming is not a service that is either provided or funded by the HSE, and it never has been. It is provided by commercial entities under a contract with recently-bereaved families who choose this service.

Historically, commercial entities have used HSE premises for embalming purposes.

However, following a review of mortuary practices nationally, it was found that there are weaknesses in consent for embalming, weaknesses in supervision, credential checks and indemnity arrangements and finally weaknesses in service level agreements and standard operating procedures in relation to this practice with commercial entities.

Barbican hosts free Friday performance

STARS from popular TV series, 'The Clinic' and 'The Tudors', will grace the stage of The Barbican in St Peter's Parish Centre this Friday, December 11th for a free-admission public play reading.

Staged by Upstate Theatre Project, 'The Ones Who Kill Shooting Stars' is described as 'a surreal comedy set on

Clogherhead beach during The Emergency (known elsewhere as World War II)'.

Written by Conall Quinn, one of the highest profile new writers to emerge in Irish theatre in recent years, this try-out reading will feature, Charlie Bonner (The Tudors / Fair City / Abbey Theatre) and Gary

Murphy, (Gate Theatre / The Tudors / The Clinic).

Also appearing will be established stage actors Karl Quinn and Bryan Burroughs who starred in the recent Upstate touring show, 'Submarine Man'.

There will also be an appearance from the rising Dundalk star, Samantha Heaney who

shot to fame earlier this year when she was nominated as Best Irish Actress 2008 in the Irish Times Theatre Awards.

She earned that for her part in 'Pumpgirl' at the Lyric Theatre in Belfast.

This once-off reading, which will start at 6pm, is a prelude to what is hoped will become a full professional production

during 2010, funds allowing.

Members of the public are invited to attend the reading and, if they wish, to offer comments and opinions afterwards.

Their views will be taken on board as the play moves to its final shape before production.

Upstate's Associate Artistic Director, Declan

Gorman, recently returned following a year's career break, says he is very pleased to see the company presenting so much exciting new work by new writers and directors.

'This is a rare opportunity to catch some of Ireland's finest stage artists at work,' he said.



The Lourdes Youth Choir perform at the launch of their album 'The Jubilee Collection' last Tuesday night.

LOURDES GROUP IN FINE VOICE

Choir raises the roof at album launch

Alison COMYN

THE Lourdes Youth Choir gave a heart-warming performance last Tuesday night of some of the tracks from their latest CD 'The Jubilee Collection', which was launched in Greenhills school hall.

A surprise attendant was choir member Theresa McKenna, who missed her own civic reception in Highlanes Gallery, as she was one of the triumphant mock trials team members from Our Lady's College, Greenhills. (see page 44 and 45 for more)

'I was very honoured to have the reception but I decided that I have been in the choir for five years, and it is important that I be here tonight,' Theresa told the packed audience, before singing a magnificent version of Beyoncé's Ave Maria, which appears

on the album.

Other solo singers featured on the album, and who gave spine-chilling performances on the night, were Hannah O'Brien (15), Ciara Duffy (14) and Maria Durnin (16).

Matured

'Ciara is our longest member in the choir and she appears twice on 'The Jubilee Collection', once when she was a little girl singing 'Away in a Manger' and again when she is 14, so you can see how her voice has matured,' says Jackie Walshe, choir director, who has worked tirelessly to get this project finished.

A bonus piece of news is that the choir entered 'Away in a Manger' and 'Adeste Fideles' from the album into this year's Lyric

FM choirs for Christmas competition and were delighted to have been told their pieces will be aired today (Wednesday December 9th) at 4.50pm.

Also full of praise was Canon Jim Carroll, who said the 27 members were a credit to Jackie and the Lourdes Church.

Special thanks were offered to Gerry Simpson from Sidetrax studio, who mastered the CD, along with John Murray, who designed the cover booklet.

The senior members of the choir will be selling the CD in Laurence Town Centre on Thursday, December 8th, price €10.

'It is also available in St Peter's and the Lourdes church or also the Mass Shop in Laurence Street, and we think it will make a wonderful little Christmas present for anyone,' adds Jackie.



comhairle choilteán na m

MEATH LOCAL AUTHORITIES - UDGRAIS AITIÚLA NA M
Meath County Council & The Town Councils of Navan, Tam & Kells

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE WATER DISCHARGE LICENCE

Meath County Council, County Hall, Railway Street, Navan, Co. Meath intends to apply to the Environmental Protection Agency for a Waste Water Discharge Licence for an existing discharge at the Wastewater Treatment Plant in the townland of Rath T.D., Ardagh, County Meath (National Grid Reference 306.714E, 262.709N). The treatment process consists of septic tank with Bord Na Mona peat filter.

The application relates to the following discharge point:

The primary discharge point PSW1 - 306.703E, 262.727N (Receiving Water - Duleek Groundwater Body)

A copy of the following documents shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the headquarters of the Environmental Protection Agency, P.O. Box 3000, Johnstown Castle Estate, Co. Wexford and at Meath County Council, County Hall, Railway Street, Navan, Co. Meath

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APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE WATER DISCHARGE LICENCE

Meath County Council, County Hall, Railway Street, Navan, Co. Meath intends to apply to the Environmental Protection Agency for a Waste Water Discharge Licence for an existing discharge at the Wastewater Treatment Plant in the townland of Hilltown Little, Bellewstown, County Meath (National Grid Reference 308.465E, 267.122N). The treatment process consists of rotating biological contactors.

The application relates to the following discharge point:

The primary discharge point PSW1 - 308.436E, 267.168N (Receiving Water - Duleek Groundwater Body)

A copy of the following documents shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the headquarters of the Environmental Protection Agency, P.O. Box 3000, Johnstown Castle Estate, Co. Wexford and at Meath County Council, County Hall, Railway Street, Navan, Co. Meath

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Meath County Council, County Hall, Railway Street, Navan, Co. Meath intends to apply to the Environmental Protection Agency for a Waste Water Discharge Licence for an existing discharge at the Wastewater Treatment Plant in the townland of Tankardstown, Clonsilla, County Meath (National Grid Reference 309.378E, 261.182N). The treatment process consists of septic tank with Bord Na Mona peat filters.

The application relates to the following discharge point:

The primary discharge point PSW1 - 309.375E, 261.203N (Receiving Water - Duleek Groundwater Body)

A copy of the following documents shall, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the headquarters of the Environmental Protection Agency, P.O. Box 3000, Johnstown Castle Estate, Co. Wexford and at Meath County Council, County Hall, Railway Street, Navan, Co. Meath

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Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters at P.O. Box 3000, Johnstown Castle Estate, Co. Wexford

www.vmeath.ie

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ATTACHMENT D



JENNINGS O'DONOVAN
& PARTNERS
CONSULTING ENGINEERS

Finisklin Business Park
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E: info@jodireland.com
W: www.jodireland.com

4654/122/001/YMcM

12th November 2009

Ms. Mary Boothman,
Development Application Unit,
Department of the Environment,
Dùn Scéine,
Hardcourt Lane,
Dublin 2.

Re: EPA Waste Water Discharge Licence for 16 Villages in County Meath

Dear Mary,

Jennings O'Donovan & Partners are preparing EPA Waste Water Discharge Certificates Applications for Meath sewerage schemes in County Meath listed below:

1. Ardcath Sewerage Scheme (discharge to groundwater)
2. Ballinabrackey Sewerage Scheme (discharges to surface water)
3. Batterstown Sewerage Scheme (discharges to surface water)
4. Bellewstown Sewerage Scheme (discharges to Groundwater)
5. Bohermeen Sewerage Scheme (discharges to surface water)
6. Castletown Sewerage Scheme (discharges to surface water)
7. Clonalvy Sewerage Scheme (discharges to groundwater)
8. Carnaross Sewerage Scheme (discharges to groundwater)
9. Cortown Sewerage Scheme (discharges to groundwater)
10. Dunderry Sewerage Scheme (discharges to surface water)
11. Hill of Tara Sewerage Scheme (discharges to groundwater)
12. Kilberry Sewerage Scheme (discharges to surface water)
13. Lloyd, Kells Sewerage Scheme (discharges to surface water)
14. Lobinstown Sewerage Scheme (discharges to surface water)
15. Robinstown Sewerage Scheme (discharges to surface water)
16. Skryne Sewerage Scheme (discharges to surface water)

Please find enclosed site location drawings together with the local designated areas at the sixteen Wastewater Treatment Plants.

Section F of the application relating to the NPWS, requires us to give details of any designation that applies to the receiving water. After consultation with the EPA they advised us to get in contact with you to get a clear picture of the boundary of the SAC and SPA and in addition we require a letter from the NPWS stating whether the discharge is deemed impact the receivers waters or if an "Appropriate Assessment" is to be carried out.

We would be grateful for your input at your earliest convenience as the applications have to be submitted to the EPA by the 22nd of December 2009. If you have any questions regarding the above or wish to discuss the application, please do not hesitate to contact this office.

Yours sincerely,



Yvonne McMonagle
for: Jennings O'Donovan & Partners

Encl.

c.c. Mr. Gerry Boyle, Meath County Council

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AttachmentD.1 RBD_Office

From: Yvonne McMonagle
Sent: 12 November 2009 17:15
To: 'info@erbd.ie'
Subject: Meath Villages Wastewater Certificates License Application

Dear Sir/ Madame,

I am currently completing 16 discharge certificates application for Meath County Council as listed below:

1. Ardcath Sewerage Scheme (discharge to groundwater)
2. Ballinabrackey Sewerage Scheme (discharges to surface water)
3. Batterstown Sewerage Scheme (discharges to surface water)
4. Bellewstown Sewerage Scheme (discharges to Groundwater)
5. Bohermeen Sewerage Scheme (discharges to surface water)
6. Castletown Sewerage Scheme (discharges to surface water)
7. Clonalvy Sewerage Scheme (discharges to groundwater)
8. Carnaross Sewerage Scheme (discharges to groundwater)
9. Cortown Sewerage Scheme (discharges to groundwater)
10. Dunderry Sewerage Scheme (discharges to surface water)
11. Hill of Tara Sewerage Scheme (discharges to groundwater)
12. Kilberry Sewerage Scheme (discharges to surface water)
13. Lloyd, Kells Sewerage Scheme (discharges to surface water)
14. Lobinstown Sewerage Scheme (discharges to surface water)
15. Robinstown Sewerage Scheme (discharges to surface water)
16. Skryne Sewerage Scheme (discharges to surface water)

A specification of the license application is to get in contact with the local RBD office about the need to monitor certain substances listed in Annex X and XIII of the Water Framework Directive in the receiving waters. Please find attached the associated drawings showing the location of the waste water treatment plants and discharge points.

The section of the application which relates to the monitoring of the substances listed in Annex 8 and 10 are in section D. After consultation with the EPA they advised us to get in contact with yourselves and to see if any of these 69 substances are present in this receiving water and if there is a need for us to monitor some of these parameters. We also require a letter from yourselves to confirm your findings.

According to the EPA they have been in contact with yourselves about this issue and that you will be aware what is needed for the application. If you have any questions about this section you can contact the EPA ring or if there is someone else in the ERBD office I could get in contact with to gather the data.

Looking forward to hearing from you.

Regards,
Yvonne McMonagle,
Jennings O'Donovan & Partners,
Consulting Engineers,
Finisklin Business Park,
Sligo.
Tel.: 071 9161416
Fax: 071 9161080
Email: ymcmonagle@jodireland.com

AttachmentD.1 RBD_Office

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ATTACHMENT D.1



MEATH VILLAGES EFFLUENT DISCHARGE SURVEY

EXECUTIVE SUMMARY

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Client:

Meath County Council

Consulting Engineers:

Jennings O'Donovan & Partners
Consulting Engineers
Finisklin
Sligo



Unit 9, Block A,
Centrepont Business Park
Oak Road
Dublin 12
Tel: (01) 4605912
Fax: (01) 4605913

Issued 24th November 2009

Clonlavy

Site 1

Average Volume - 2.7 M3/Day @225/h/day - = 12 pe
Maximum Volume - 7.3 m3/Day @225/h/day - = 32pe
Maximum Rate of Discharge - 0.5 l/s
Method of flow measurement - Area velocity flow monitor
Summary: Daily Volumes (m3).

Date	MaxFlow Time	MaxFlow (l/s)	MinFlow Time	MinFlow (l/s)	AveFlow (l/s)	TotVolume (m3)
4-NOV-09	13:00	0.1	12:10	0.0	0.0	1.2
5-NOV-09	9:16	0.0	0:00	0.0	0.0	2.3
6-NOV-09	14:54	0.1	0:00	0.0	0.0	2.3
7-NOV-09	10:14	0.3	0:00	0.0	0.0	2.5
8-NOV-09	17:16	0.1	0:00	0.0	0.0	2.3
9-NOV-09	13:42	0.5	13:24	0.0	0.0	2.7
10-NOV-09	23:58	0.5	10:58	0.0	0.1	5.0
11-NOV-09	0:00	0.4	0:02	0.0	0.0	1.6
12-NOV-09	17:28	0.5	0:00	0.0	0.1	6.6
13-NOV-09	15:18	0.5	0:04	0.0	0.1	7.3
14-NOV-09	22:38	0.4	0:00	0.0	0.0	0.5
15-NOV-09	13:16	0.5	0:00	0.0	0.0	2.3
16-NOV-09	6:58	0.3	0:00	0.0	0.0	1.1
17-NOV-09	15:22	0.1	0:00	0.0	0.0	0.0
18-NOV-09	10:18	0.1	0:00	0.0	0.0	
-NOV-		0.5		0.0	0.0	37.7

Comments

Due to the nature of the flow at this site a theoretical flow value was used based on a Flow/Depth relationship. Flow was calculated based on depth and velocity spot checks and intermittent flow data. Outlined below is the equation used for the F/D relationship

$$\text{Flow} = A \times D^B$$

Where A = 0.110E-3; D = Depth; B = 1.84 (A = coefficient 1; B = Coefficient 2)

Flow depth relationship not used above 100mm depth due to inaccuracy caused by line backing up.

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ATTACHMENT D.2

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ATTACHMENT E.3

[illegible]

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ATTACHMENT E.4

For Quality and Excellence in Laboratory Analysis



Quality Systems and Laboratory Services

P.O. Box 27,
Strandfield Business Park,
Rosslare Road,
Wexford
Tel/Fax 053 9145600
Email: info@qlab.ie

Test Report
Copy

Customer: Jennings O'Donovan & Pa
Consulting Engineers
Finisklin Business Park
Sligo
Co. Sligo
Account.: 9413

Report No.: 51731
Report Date: 01/12/2009
Received Date: 11/11/2009
Analysis Date: 12/11/2009
Order No.:
Page: 1 of 2
Revision Date:

Sample ID: 77295

Description: Groundwater Sample taken @ Bellewstown 11.11.09 12.30hrs by Conor (Q-Lab)

Ref No:

ID	Test	SOP	Results
<input type="checkbox"/> 77295	Dichloromethane ug/l	Subcontracted	<5.0 ✓
<input type="checkbox"/> 77295	Tributyltin ug/l	Subcontracted	<0.02 5000 ✓
<input type="checkbox"/> 77295	Boron as B mg/l	Subcontracted	0.03
<input type="checkbox"/> 77295	Nickel as Ni mg/l	Subcontracted	0.0020 ✓
<input type="checkbox"/> 77295	Fluoride as F, mg/l	Subcontracted	<0.1
<input type="checkbox"/> 77295	Phenols, ug/l	Subcontracted	<0.5
<input type="checkbox"/> 77295	Temperature, °C	STM-C-41.1.0	10.7
<input type="checkbox"/> 77295	Lead as Pb, mg/l	Subcontracted	0.0005 ✓
<input type="checkbox"/> 77295	Simazine ug/l	Subcontracted	<0.01 ✓
<input checked="" type="checkbox"/> 77295	pH value	STM-C-3.1.00	7.06
<input type="checkbox"/> 77295	Atrazine ug/l	Subcontracted	<0.01 ✓
<input type="checkbox"/> 77295	Barium as Ba mg/l	Subcontracted	0.0013
<input type="checkbox"/> 77295	Selenium as Se mg/l	Subcontracted	<0.0002
<input type="checkbox"/> 77295	Mercury as Hg mg/l	Subcontracted	0.00028
<input type="checkbox"/> 77295	Cadmium as Cd mg/l	Subcontracted	<0.0001
<input type="checkbox"/> 77295	Zinc as Zn mg/l	Subcontracted	0.0117 ✓
<input type="checkbox"/> 77295	Toluene ug/l	Subcontracted	<0.5 ✓
<input type="checkbox"/> 77295	Total Nitrogen as N, mg/l	STM-C-13.1.0	2.2
<input type="checkbox"/> 77295	Copper as Cu, mg/l	Subcontracted	0.006 ✓
<input type="checkbox"/> 77295	Chromium as Cr mg/l	Subcontracted	<0.001
<input type="checkbox"/> 77295	Arsenic as As mg/l	Subcontracted	0.0093 ✓
<input type="checkbox"/> 77295	Sulphates as SO4, mg/l	STM-C-18.2.0	<2

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Test Report

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Report No.: 51731
Report Date: 01/12/2009
Received Date: 11/11/2009
Analysis Date: 12/11/2009
Order No.:
Page: 2 of 2
Revision Date:

<input type="checkbox"/>	77295	Ortho Phosphates (as mg P/L)	STM-C-20.2.0	0.15
<input type="checkbox"/>	77295	Total Phosphorous as P, mg/l	STM-C-19.2.0	0.15
<input type="checkbox"/>	77295	Xylenes ug/l	Subcontracted	<0.5
<input type="checkbox"/>	77295	Nitrites as NO ₂ , mg/l	STM-C-8.2.04	<0.010
<input checked="" type="checkbox"/>	77295	Total Hardness as CaCO ₃ , mg/l	STM-C-6.1.00	126
<input type="checkbox"/>	77295	Dissolved oxygen, mg/l	STM-C-10.3.0	8.10
<input checked="" type="checkbox"/>	77295	COD mg/l	STM-C-11.2.0	<3
<input checked="" type="checkbox"/>	77295	BOD, mg/l	STM-C-10.2.0	<0.5
<input type="checkbox"/>	77295	Ammonia as NH ₃ -N, mg/l	STM-C-7.2.04	<0.02
<input checked="" type="checkbox"/>	77295	Suspended Solids, mg/l	STM-C-2.1.00	<3
<input checked="" type="checkbox"/>	77295	Conductivity, uS/cm @ 20°C	STM-C-4.1.00	354
<input type="checkbox"/>	77295	Cyanide mg/l	Subcontracted	<0.005
<input checked="" type="checkbox"/>	77295	Nitrates as NO ₃ mg/l	STM-C-9.3.08	9.2

Comments:

Report Authorised By:

Peter O'Byrne

Peter O'Byrne Chem. Lab. Manager

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☒ Indicates Accredited Test. Opinions and Comments are not included in the scope of Accreditation



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ATTACHMENT F.1

Response Matrices

You will need to print a

Vulnerability Map

Aquifer Map

Source Protection Area map

for your calculations.

Groundwater Protection Zones

Groundwater Protection Responses for Landfills

The IPC Landspreading of Organic Wastes

The On-site Wastewater Treatment Systems for Single Houses

e.g. Septic Tank Systems

For further information please [click here](#)

Disclaimer

The entire data set is designed for general information and strategic planning usage.

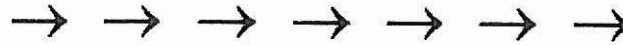
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It is intended that statutory authorities should apply a scheme in decision-making on the basis that the best available data are being used. The onus is then on a developer to provide new information which would enable the zonation to be altered and improved and, in certain circumstances, the planning or regulatory response to be changed.

Matrix of Groundwater Protection Zones

VULNERABILITY RATING	SOURCE PROTECTION ZONES		RESOURCE PROTECTION ZONES					
			Regionally Important Aquifers		Locally Important Aquifers		Poor Aquifers	
	Inner (SI)	Outer (SO)	Rk	Rf/Rg	Lm/Lg	LI	PI	Pu
Extreme (E)	SE-E	SO-E	Rk-E	Rf-E	Lm-E	LI-E	PI-E	Pu-E
High (H)	SI-H	SO-H	Rk-H	Rf-H	Lm-H	LI-H	PI-H	Pu-H
Moderate (M)	SI-M	SO-M	Rk-M	Rf-M	Lm-M	LI-M	PI-M	Pu-M
Low (L)	SI-L	SO-L	Rk-L	Rf-L	Lm-L	LI-L	PI-L	Pu-L



Arrows indicate direction of decreasing risk



[Back to Top](#)

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Groundwater Protection Responses for Landfills – Summary

Response Matrix for Landfills

VULNERABILITY RATING	SOURCE PROTECTION AREA		RESOURCE PROTECTION Aquifer Category					
			Regionally Important (R)		Locally Important (L)		Poor Aquifers (P)	
	Inner	Outer	Rk	R/Rg	Lm/Lg	Ll	P1	Pu
Extreme (E)	R4	R4	R4	R4	R3 ²	R2 ²	R2 ²	R2 ¹
High (H)	R4	R4	R4	R4	R3 ¹	R2 ¹	R2 ¹	R1
Moderate (M)	R4	R4	R4	R3 ¹	R2 ²	R2 ¹	R2 ¹	R1
Low (L)	R4	R3 ¹	R3 ¹	R3 ¹	R1	R1	R1	R1

In all cases standards prescribed in the EPA Landfill Site Design Manual (EPA 1999) or conditions of a waste licence will apply

R1 Acceptable subject to guidance in the EPA Landfill Design Manual or conditions of a waste licence

R2¹ Acceptable subject to guidance outlined in the EPA Landfill Design Manual or conditions of a waste licence

- Special attention should be given to checking for the presence of high permeability zones. If such zones are present then the landfill should only be allowed if it can be proven that the risk of leachate movement to these zones is insignificant. Special attention must be given to existing wells down-gradient of the site and to the projected future development of the aquifer

R2² Acceptable subject to guidance outlined in the EPA Landfill Design Manual or conditions of a waste licence

- Special attention should be given to checking for the presence of high permeability zones. If such zones are present then the landfill should only be allowed if it can be proven that the risk of leachate movement to these zones is insignificant. Special attention must be given to existing wells down-gradient of the site and to the projected future development of the aquifer
- Groundwater control measures such as cut-off walls or interceptor drains may be necessary to control high water table or the head of leachate may be required to be maintained at a level lower than the water table depending on site conditions

R3 Not generally acceptable unless it can be shown that:

- the groundwater in the aquifer is confined or
- there will be no significant impact on the groundwater and
- it is not practicable to find a site in a lower risk area

R3² Not generally acceptable unless it can be shown that:

- there is a minimum consistent thickness of 3 metres of low permeability subsoil present
- there will be no significant impact on the groundwater and
- it is not practicable to find a site in a lower risk area

R4 Not acceptable

- This guidance is for the siting of landfills for non-hazardous wastes
- New landfills should not generally be developed on regionally important aquifers
- The siting, design, operation and monitoring of landfills must comply with the guidelines outlined in the EPA's Landfill manuals except where facilities hold a waste licence issued by the EPA
- It is recommended that all landfills be located in, or as near as possible to, the zone in the bottom right hand corner of the matrix
- Special attention should be given to checking for the presence of more permeable zones such as faults, particularly in fractured bedrock

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Groundwater Protection Responses for Landspreading – Summary

Response Matrix for Landspreading

VULNERABILITY RATING	SOURCE PROTECTION AREA		RESOURCE PROTECTION Aquifer Category					
			Regionally Important (R)		Locally Important (L)		Poor Aquifers (P)	
	Inner	Outer	R _k	R/R _k	L _m /L _k	L _i	P _i	P _n
Extreme (E)	R ₄	R ₄	R ₃ ²	R ₃ ²	R ₃ ¹	R ₃ ¹	R ₃ ¹	R ₃ ¹
High (H)	R ₄	R ₂ ¹	R ₁	R ₁	R ₁	R ₁	R ₁	R ₁
Moderate (M)	R ₃ ¹	R ₂ ¹	R ₁	R ₁	R ₁	R ₁	R ₁	R ₁
Low (L)	R ₃ ¹	R ₂ ¹	R ₁	R ₁	R ₁	R ₁	R ₁	R ₁

R₁ Acceptable, subject to normal good practice

R₂¹ Acceptable subject to a maximum organic nitrogen load (including that deposited by grazing animals) not exceeding 170 kg/hectare/yr

R₃¹ Not generally acceptable, unless a consistent minimum thickness of 1 m of soil and subsoil can be demonstrated

R₃² Not generally acceptable, unless a consistent minimum thickness of 2 m of soil and subsoil can be demonstrated

R₃³ Not generally acceptable, unless no alternative areas are available and detailed evidence is provided to show that contamination will not take place

R₄ Not acceptable

- If contamination by nitrate (or other contaminants) is a problem in any particular area then more restrictive responses may be necessary. Monitoring carried out under any Local Authority or Agency authorisation will assist in determining whether or not a variation in any of these responses is required.
- The total nitrogen (organic and inorganic) load applied should not exceed Teagasc's nutrient recommendations for growing crops.
- No spreading should be allowed within 50 m of groundwater sources.
- In karst limestone areas features such as swallow holes, caves and streams connected to karst systems must be taken into account. Landspreading should not occur within 30 m of karst features.
- Landspreading should coincide with the growing season so that the nutrients applied will be utilised by the growing crop.
- Landspreading should be avoided when soil conditions prevent infiltration or when heavy rain is forecast within 48 hours. It is generally unacceptable to carry out landspreading during the period November to February inclusive. Operators who are considering landspreading during this period should consult the relevant authority.
- Site investigations (e.g. trial pits, auger holes, boreholes) should reach sufficient depths to show that the minimum required subsoil thickness is present. In extreme vulnerability areas or within source protection areas there should be at least one investigation point per hectare. In all other cases the sampling points should be at a minimum frequency of one per 5 hectares.

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Groundwater Protection Responses for On-site Wastewater Systems for Single Houses - Summary

The potential suitability of a site for the development of an on-site system is assessed using the methodology outlined in *Wastewater Treatment Manual: Treatment Systems for Single Houses* (EPA, 2000). The groundwater protection responses set out below should be used during the desk study assessment of a site to give an early indication of the suitability of a site for an on-site system. Information from the on-site assessment should be used to confirm or modify the response.

Response Matrix for On-site Treatment Systems

VULNERABILITY RATING	SOURCE PROTECTION AREA *		RESOURCE PROTECTION Aquifer Category					
			Regionally Important		Locally Important		Poor Aquifers	
	Inner (SI)	Outer (SO)	RI	RIH	LI/LH	LI	P1	Pn
Extreme (E)	R3 ⁺	R3 ⁺	R2 ⁺	R2 ⁺	R2 ⁺	R2 ⁺	R2 ⁺	R2 ⁺
High (H)	R2 ⁺	R2 ⁺	R2 ⁺	R1	R1	R1	R1	R1
Moderate (M)	R2 ⁺	R2 ⁺	R1	R1	R1	R1	R1	R1
Low (L)	R2 ⁺	R1	R1	R1	R1	R1	R1	R1

* For public group scheme or industrial water supply sources where protection zones have not been delineated the arbitrary distances given in D.E.L.G./EPA/GSI (1999) of 300 m for the Inner Protection Area (SI) and 1000 m for the Outer Protection Area (SO) should be used as a guide up-gradient of the source.

- R1** Acceptable subject to normal good practice (i.e. system selection, construction, operation and maintenance in accordance with EPA (2000)).
- R2⁺** Acceptable subject to normal good practice. Where domestic water supplies are located nearby, particular attention should be given to the depth of subsoil over bedrock such that the minimum depths required (EPA, 2000) are met and that the likelihood of microbial pollution is minimised.
- R2⁺** Acceptable subject to normal good practice and the following additional condition:
1) There is a minimum thickness of 2 m unsaturated soil/subsoil beneath the invert of the percolation trench of a conventional septic tank system.
- OR**
- 1) A treatment system other than a conventional septic tank system as described in EPA (2000) is installed with a minimum thickness of 0.6 m unsaturated soil/subsoil with P/T values from 1 to 50 (in addition to the polishing filter which should be a minimum depth of 0.6 m) beneath the invert of the polishing filter (i.e. 1.2 m in total for a soil polishing filter).
- R2⁺** Acceptable subject to normal good practice, condition 1 above and the following additional condition:
2) The authority must be satisfied that on the evidence of the groundwater quality of the source and the number of existing houses, the accumulation of significant nitrate and/or microbiological contamination is unlikely.
- R2⁺** Acceptable subject to normal good practice, conditions 1 and 2 above and the following additional condition:
3) No on-site treatment system should be located within 60 m of the public group scheme or industrial water supply source.
- R3⁺** Not generally acceptable, unless: A conventional septic tank system is installed with a minimum thickness of 2 m unsaturated soil/subsoil beneath the invert of the percolation trench (i.e. an increase of 0.8 m from the EPA manual).

OR

A treatment system other than a conventional septic tank system, as described in EPA (2000), is installed with a minimum thickness of 0.6 m unsaturated soil/subsoil with P/T values from 1 to 50 (in addition to the polishing filter which should be a minimum depth of 0.6 m), beneath the invert of the polishing filter (i.e. 1.2 m in total for a soil polishing filter).

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1 of 2	Type of soil/subsoil	Depth of subsoil (ft)	Public Water Supply	Minimum distance (ft) from receptor to protection area
CLAY, silty, sandy	1.2	As indicated (see notes)	Domestic well, alongside (no gradient)	up-gradient
CLAY (e.g. clayey silty)	>3.0	60	15	30
CLAY/SILT	1.2	60	15	45
Sandy SILT, clayey, silty	1.2	60	15	30
GRAVEL (e.g. sandy silty)	>8.0	60	15	40
SAND, GRAVEL	2.0	60	15	60
SAND	>8.0	60	15	40

Table 1 below provides recommendations between receptors and potential areas of polluting interest, in order to protect groundwater. Use of the depths and distances in this table does not guarantee that pollution will not be caused, rather, it will reduce the risk of significant pollution occurring.

3) A management and maintenance agreement is completed with the systems supplier.

AND
subject to the following conditions

subject to the following conditions

- 1) The authority must be satisfied that on the evidence of the groundwater quality of the source and the number of existing users the accumulation of significant nitrate and/or microbiological contamination is unlikely
- 2) No on-site treatment system should be located within 50 m of the public group scheme or industrial water supply source.
- 3) A management and maintenance agreement is completed with the systems supplier.

AND



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Legend

National Draft Bedrock Aquifer: Map	
Rf - Regionally Important Aquifer - Fissured bedrock	
Rk - Regionally Important Aquifer - Karstified	
Rkd - Regionally Important Aquifer - Karstified (diffuse)	
Rkc - Regionally Important Aquifer - Karstified (conduit)	
Lm - Locally Important Aquifer - Bedrock which is Generally Moderately Productive	
Lk - Locally Important Aquifer - Karstified	
Li - Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones	
Pl - Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones	
Pu - Poor Aquifer - Bedrock which is Generally Unproductive	
Unclassified	
RBD Boundaries	
County Boundaries	

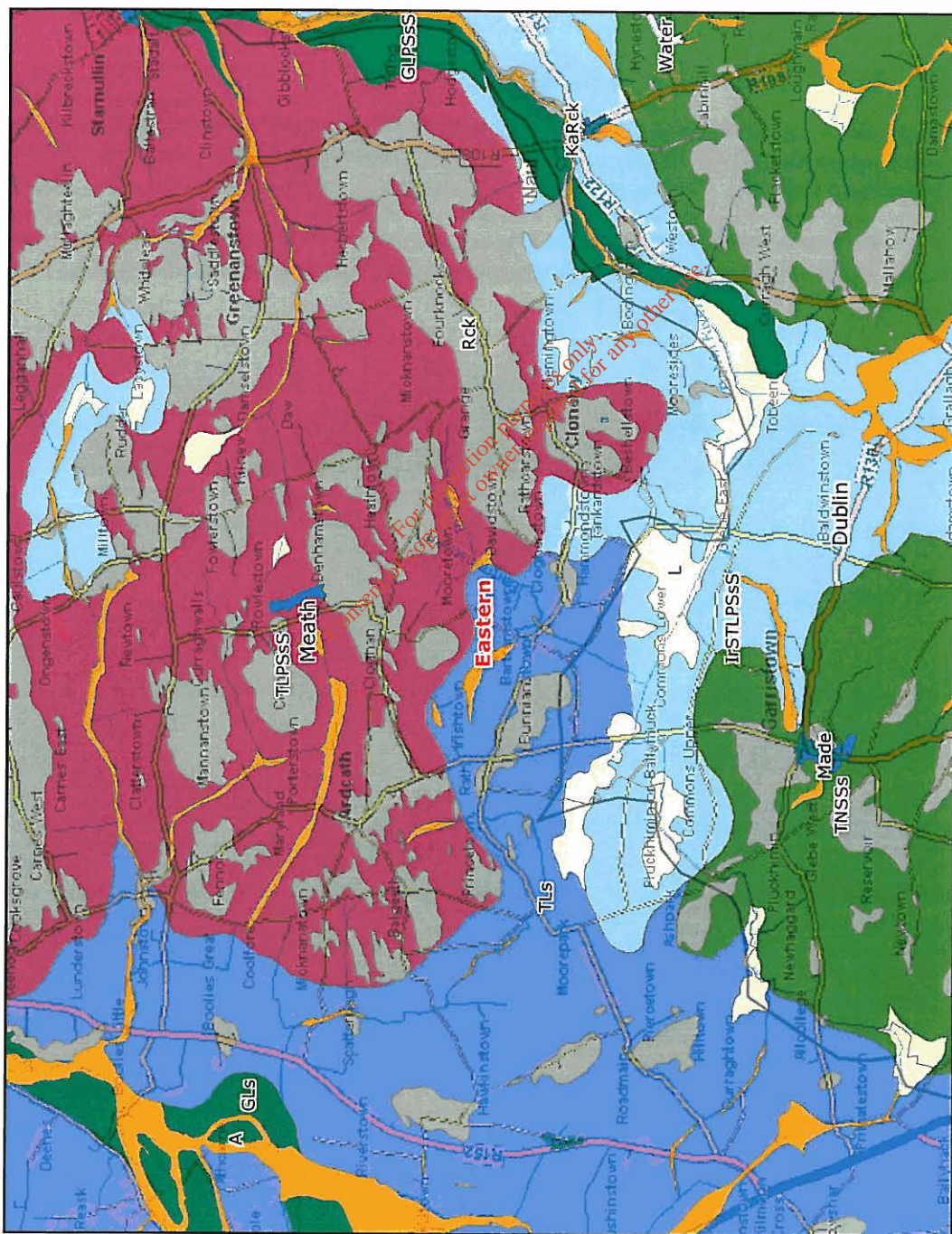
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Map center: 308609, 261914

Snapshot Date: 20-Oct-2009



Ardcath & Clonalvy - Teagasc Subsoil Map



0 1.6 3.2 4.8 km.

Map center: 308422, 261962

Scale: 1:62,679

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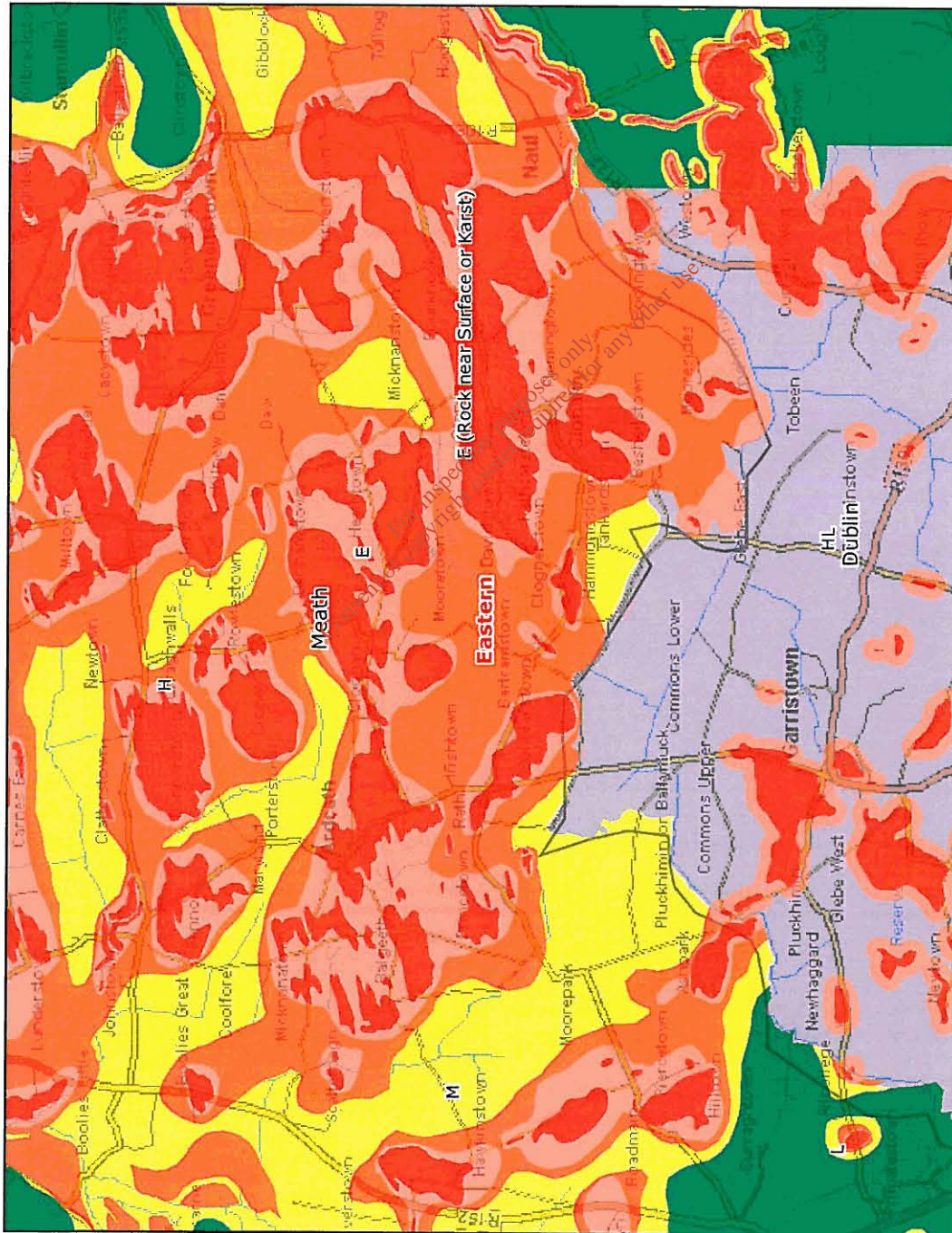
Snapshot Date: 20-Oct-2009



Ardcath & Clonalvy - Vulnerability Map



- Legend**
- Eastern Interim Vulnerability
- E (Rock near Surface or Karst)
 - E - Extreme
 - H - High
 - M - Moderate
 - L - Low
 - HL - High to Low. Only an interim study took place.
 - Water
 - RBD Boundaries
 - County Boundaries



Scale: 1:57,703

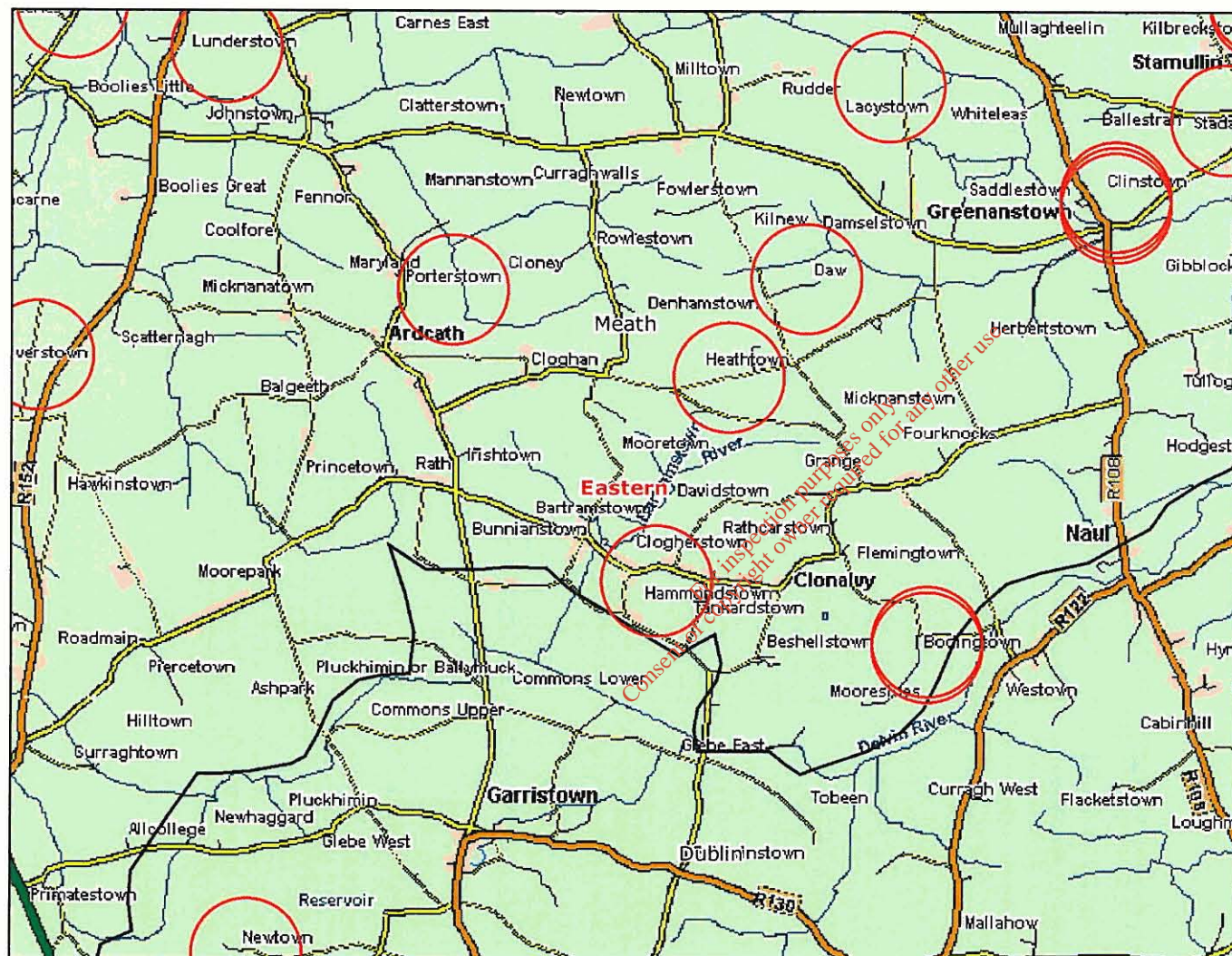
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Snapshot Date: 20-Oct-2009

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Ardcath & Clonalvy - Wells within 1km Accuracy



- Legend**
- Wells Accuracy within 1km
 - RBD Boundaries
 - County Boundaries

0 1500 3000 4500 m.

Map center: 308609, 261914

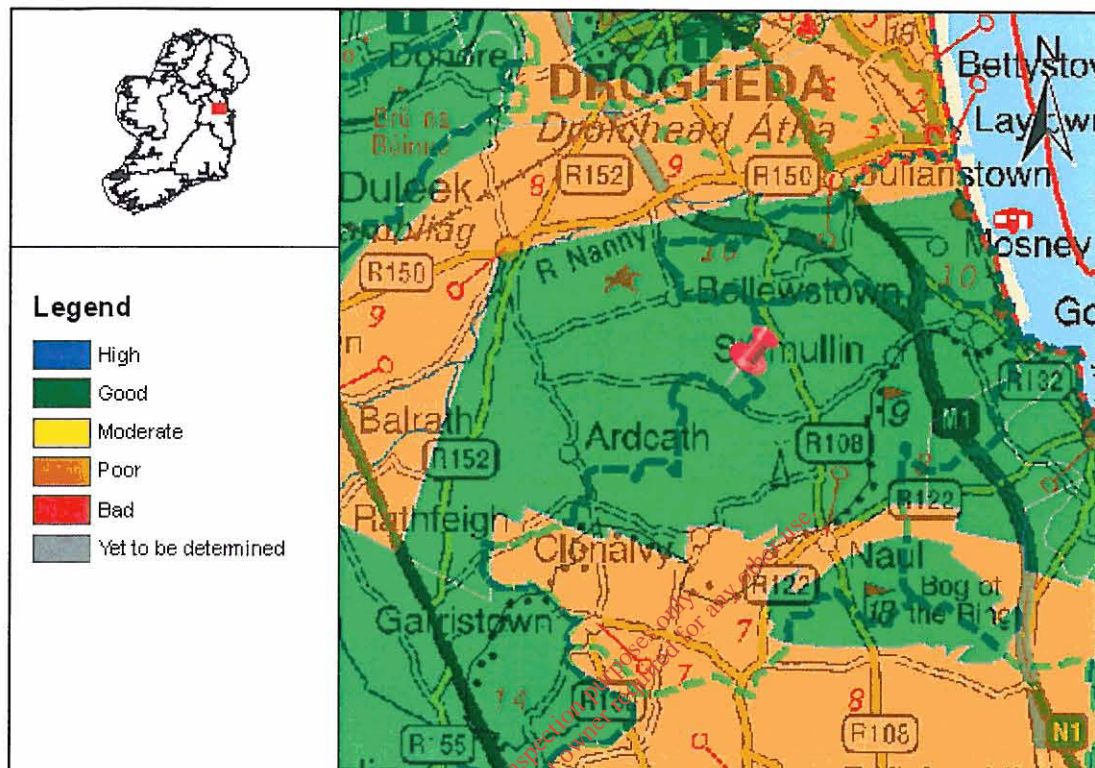
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Snapshot Date: 20-Oct-2009



Full Report for Waterbody Duleek



Date Reported to Europe: 22/12/2008

Date Report Created 30/11/2009



Summary Information:

WaterBody Category: Groundwater Waterbody

WaterBody Name: Duleek

WaterBody Code: 1E_EA_G_012

Overall Status: Good

Overall Objective: Protect

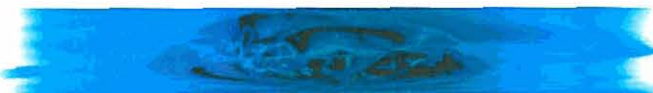
Overall Risk: 2a Probably Not At Risk

Applicable Supplementary Measures: Unsewered;
Report data based upon Draft RBMP, 22/12/2008.

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Date Reported to Europe: 22/12/2008

Date Report Created 30/11/2009



Chemical and Quantitative Status Report

WaterBody Category: Groundwater Waterbody

WaterBody Name: Duleek

WaterBody Code: IE_EA_G_012

Overall Status Result: Good

	Status Element Description	Result
	Groundwater Quality	
WB	Water Balance Status	GS-HC
INT	Saline Intrusions Status	GS-HC
DW	Drinking Waters Status	GS-HC
DIF	Diffuse Elements (General) Status	GS-HC
	Groundwater Quality (Point Source)	
CL	Contaminated Land Status	GS-HC
MI	Mine Status	GS-HC
UR	Urban Status	GS-HC
PTO	Overall Point Source Status	GS-HC
	Groundwater Quality (General)	
GQ	General Groundwater Quality Status	GS-HC
	Surface Water	
TC	Transitional & Coastal Status	GS-LC
SWO	Surface Water Quality Overall Status	GS-LC
SWQ	Surface Water Quantity Overall Status	GS-HC
	Groundwater Dependent Terrestrial Ecosystems	
TE	GWDTE Status	GS-HC
	Overall	
QUO	Overall Quantitative Status	GS-HC
O	Final Status Classification	Good

Date Reported to Europe: 22/12/2008

Date Report Created 30/11/2009



Risk Report

WaterBody Category: Groundwater Waterbody
WaterBody Name: Duleek
WaterBody Code: IE_EA_G_012
Overall Risk Result: **2a** Probably Not At Risk

Risk Test Description		Risk	
Groundwater Quality			
WB	Water Balance Risk	2b	Not At Risk
INT	Intrusions Risk	2b	Not At Risk
DW	Drinking Waters Risk	2b	Not At Risk
DIF	Diffuse Elements (General) Risk	2a	Probably Not At Risk
Groundwater Quality (Point Risk)			
LF	Landfill Risk	2b	Not At Risk
QY	Quarry Risk	2b	Not At Risk
UW	UWWT Risk	2b	Not At Risk
CL	Contaminated Land Risk	2b	Not At Risk
MI	Mine Risk	2b	Not At Risk
UR	Urban Risk	2b	Not At Risk
Groundwater Quality (General)			
GQ	General Groundwater Quality Risk	2a	Probably Not At Risk
Surface Water			
RV	River Risk	2a	Probably Not At Risk
TC	Transitonal & Coastal Risk	2a	Probably Not At Risk
SWO	Surface Water Quality Overall Risk	2a	Probably Not At Risk
SWQ	Surface Water Quantity Overall Risk	2b	Not At Risk
Groundwater Dependent Terrestrial Ecosystems			
TE	GWDTE Risk	2b	Not At Risk
Overall Risk			
RA	Overall Risk	2a	Probably Not At Risk

Date Reported to Europe: 22/12/2008

Date Report Created 30/11/2009



Objectives Report

WaterBody Category: Groundwater Waterbody

WaterBody Name: Duleek

WaterBody Code: IE_EA_G_012

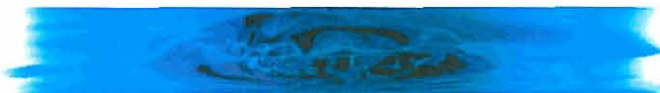
Overall Objective: Protect

Objectives Description		Result
Objectives		
OB1	Groundwater Quantitative Objective	Protect
OB2	Groundwater Chemical Objective	Protect
OBO	Overall Objective	Protect
Deadline		
EX	Revised Objective Deadline	2015
OBO	Overall Objective and Deadline	Protect

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Date Reported to Europe: 22/12/2008

Date Report Created 30/11/2009



Basic Measures Report

WaterBody Category: Groundwater Waterbody

WaterBody Name: Duleek

WaterBody Code: IE_EA_G_012

Basic Measures Description		Applicable
Key Directives		
BA	Bathing Waters Directive	Yes
BI	Birds Directive	No
HA	Habitats Directive	No
DW	Drinking Waters Directive	Yes
SEV	Major Accidents and Emergencies (Seveso) Directive	Yes
EIA	Environmental Impact Assessment Directive	Yes
SE	Sewage Sludge Directive	Yes
UW	Urban Waste Water Treatment Directive	Yes
PL	Plant Protection Products Directive	Yes
NI	Nitrates Directive	Yes
IP	Integrated Pollution Prevention Control Directive	Yes
Other Stipulated Measures		
CR	Cost recovery for water use	Yes
SU	Promotion of efficient and sustainable water use	Yes
DWS	Protection of drinking water sources	Yes
AB	Control of abstraction and impoundments	Yes
PT	Control of point source discharges	Yes
DI	Control of diffuse source discharges	Yes
GWD	Authorisation of discharges to groundwater	Yes
PS	Control of priority substances	No
MOR	Control of physical modifications to surface waters	No
OA	Controls on other activities impacting on water status	Yes
AP	Prevention or reduction of the impact of accidental pollution incidents	Yes

Date Reported to Europe: 22/12/2008

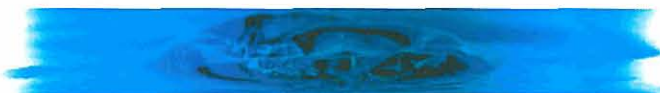
Date Report Created 30/11/2009



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Date Reported to Europe: 22/12/2008

Date Report Created 30/11/2009



Unsewered Properties Supplementary Measures Report

WaterBody Category: Groundwater Waterbody

WaterBody Name: Duleek

WaterBody Code: IE_EA_G_012

	Supplementary Measures for Unsewered Properties	Applicable
SP1	Amend building regulations	Yes
SP2	Establish certified expert panels for site investigation and certification of installed systems	Yes
SP3	Assess applications for new unsewered systems by applying risk mapping/decision support systems and codes of practice	Yes
SP4	Carry out an inspection programme in prioritised locations for existing systems and record results in an action tracking system	Yes
SP5	Enforce requirements for percolation	following inspection
SP6	Enforce requirements for de-sludging	Yes
SP7	Consider connection to municipal systems	Where feasible

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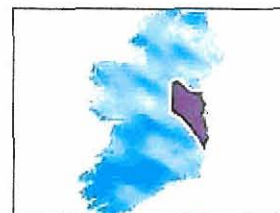
Date Reported to Europe: 22/12/2008

Date Report Created 30/11/2009

Waterbody Report for Duleek Ground Waterbody

Report Creation Date: 21 October 2009

Waterbody Category: Ground Waterbody
Waterbody Name: Duleek
Waterbody Code: IE_EA_G_012
Area (km2): 114,129.65
RBD Name: Eastern River Basin District
Overall Risk Result: **1B** Probably at significant risk
Test Date: 01 January 2005



Risk Test Description

Risk Test Result

Abstraction	Groundwater balance	2b	Not at significant risk
	Intrusion	2b	Not at significant risk
Diffuse	Mobile chemicals	1B	Probably at significant risk
	Mobile nutrients (NO3)	2A	Probably not at significant risk
	Clustered onsite systems & leaking urban sewerage systems	2B	Not at significant risk
DWPA Diffuse	Mobile chemicals	1B	Probably at significant risk
	Mobile nutrients (NO3)	2A	Probably not at significant risk
GWDW Abstraction	Water balance	2b	Not at significant risk
GWDW Diffuse	Clustered onsite systems & leaking urban sewerage systems (NO3)	2B	Not at significant risk
	Clustered onsite systems & leaking urban sewerage systems (PO4)	2B	Not at significant risk
	Less mobile nutrients (PO4)	2B	Not at significant risk
	Mobile chemicals	2B	Not at significant risk
	Mobile nutrients (NO3)	2B	Not at significant risk
GWDW Point	Mining	2b	Not at significant risk
Point Source	Contaminated land	2b	Not at significant risk
	Landfills	2b	Not at significant risk
	Mining	2b	Not at significant risk
	Oil industry infrastructure	2b	Not at significant risk
	Quarries	2b	Not at significant risk
	Trade effluent discharges	2b	Not at significant risk
	Urban waste water discharges	2b	Not at significant risk
	Risk result for water balance and intrusion (worst case):	2b	Not at significant risk
Risk Diffuse	Risk result for water balance and intrusion (worst case):	2b	Not at significant risk
	Risk result for all diffuse sources of pollution (worst case):	1b	Probably at significant risk
	Risk result for all diffuse sources of pollution (worst case):	1b	Probably at significant risk
	Risk result for all diffuse pressures on GWDWB (worst case):	2b	Not at significant risk
Risk Point Source	Risk result for clustered onsite systems & leaking urban sewerage systems:	2b	Not at significant risk
	Risk result for all point sources of pollution (worst case):	2b	Not at significant risk
	Risk result for all point sources of pollution (worst case):	2b	Not at significant risk
Risk Result Overall	Risk result for all tests carried out on this waterbody (worst case):	1b	Probably at significant risk
	Risk result for all tests carried out on this waterbody (worst case):	1b	Probably at significant risk
	Risk result for all tests carried out on GWDWB (worst case):	2b	Not at significant risk