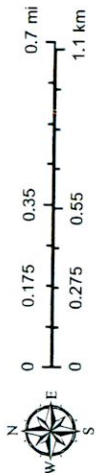


Legend

- Structural Symbols 100K ITM 2018**
- Strike and dip of first foliation
 - Bedrock Outcrops 100 ITM 2018
- Bedrock Linework 100k ITM 2018**
- Area
 - Dyke
 - Fault
- Bedrock Polygons 100k ITM 2018**
- Lucan Formation
 - Type 1 granodiorite
 - Type 3 muscovite porphyritic
 - Type 2e equigranular
 - Type 2p microcline porphyritic
 - Aghfarrell Formation
 - Butter Mountain Formation
 - Pollaphuca Formation

Scale: 1:25,000

Geological Survey Ireland



Map Centre Coordinates (ITM) 710,863 723,499
 5/26/2022, 7:58:52 AM



This map and its data may not be used or reproduced for commercial purposes without the prior written permission of Copyright holders. This map is a user generated static output from an internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Ordnance Survey Ireland Licence No. EN 0047221
 © Ordnance Survey Ireland/Government of Ireland
 © Geological Survey Ireland/Government of Ireland

Legend

Groundwater_Vulnerability_40K_IE...

Rock at or near Surface or Karst

- Extreme
- High *
- Moderate
- Low
- Water



Scale: 1:10,000

Geological Survey Ireland



Map Centre Coordinates (ITM): 709,535 723,657
5/26/2022, 7:54:26 AM



Ordnance Survey Ireland Licence No. EN 0047221
© Ordnance Survey Ireland/Government of Ireland
© Geological Survey Ireland/Government of Ireland

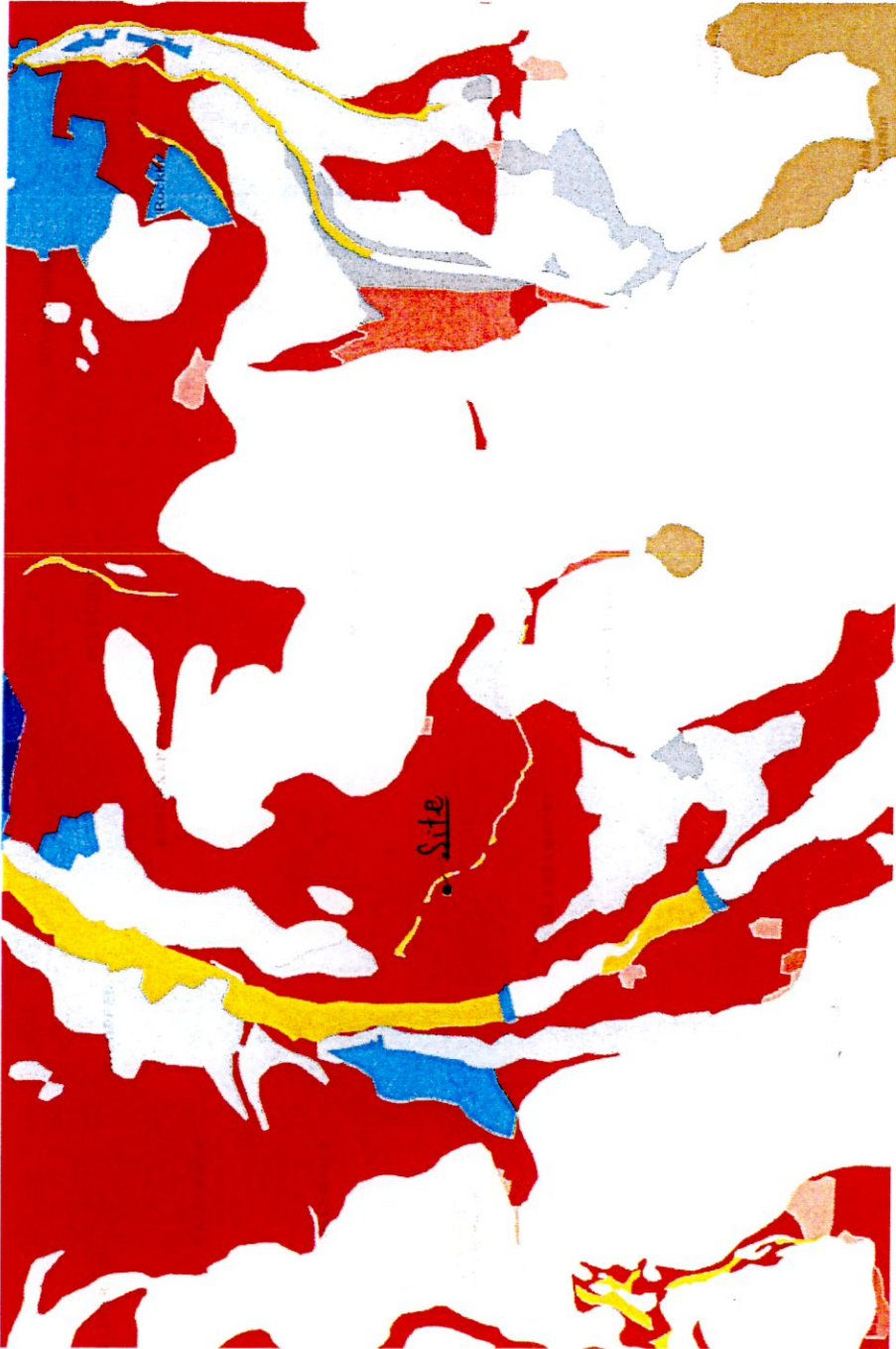
This map and its data may not be used or reproduced for commercial purposes without the prior written permission of Copyright holders. This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

SOIL CLASSIFICATION MAP

Teagasc Soils

Teagasc Soils

- * AminDW - Deep well drained mineral (Mainly acidic)
- AminPD - Mineral poorly drained (Mainly acidic)
- AminPDPT - Peaty poorly drained mineral (Mainly acidic)
- AminSW - Shallow well drained mineral (Mainly acidic)
- AminSP - Shallow poorly drained mineral (Mainly acidic)
- AminSPPT - Shallow peaty poorly drained mineral (Mainly acidic)
- AminSRPT - Shallow, rocky, peaty/non-peaty mineral complexes (Mainly acidic)
- BminDW - Deep well drained mineral (Mainly basic)
- BminPD - Mineral poorly drained (Mainly basic)
- BminPDPT - Peaty poorly drained mineral (Mainly basic)
- BminSW - Shallow well drained mineral (Mainly basic)
- BminSP - Shallow poorly drained mineral (Mainly basic)
- BminSPPT - Shallow peaty poorly drained mineral (Mainly basic)
- BminSRPT - Shallow, rocky, peaty/non-peaty mineral complexes (Mainly basic)
- BktPt - Blanket peat
- FenPt - Fen peat
- RsPt - Raised Peat
- Cut - Cutover/cutaway peat
- AlluvMIN - Alluvial (mineral)
- AlluvMRL - Alluvial (marl)



AQUIFER CLASSIFICATION MAP

Groundwater Resources (Aquifers)

Gravel Aquifer

- Locally important gravel aquifer
- Regionally important gravel aquifer

Bedrock Aquifer Faults

Bedrock Aquifer

- Rkc - Regionally Important Aquifer - Karstified (conduit)
- Rkd - Regionally Important Aquifer - Karstified (diffuse)
- RK - Regionally Important Aquifer - Karstified
- Rf - Regionally Important Aquifer - Fissured bedrock
- 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

Lake



PHOTOGRAPH NO. 1 - TRIAL HOLE



PHOTOGRAPH NO. 2 - TRIAL HOLE



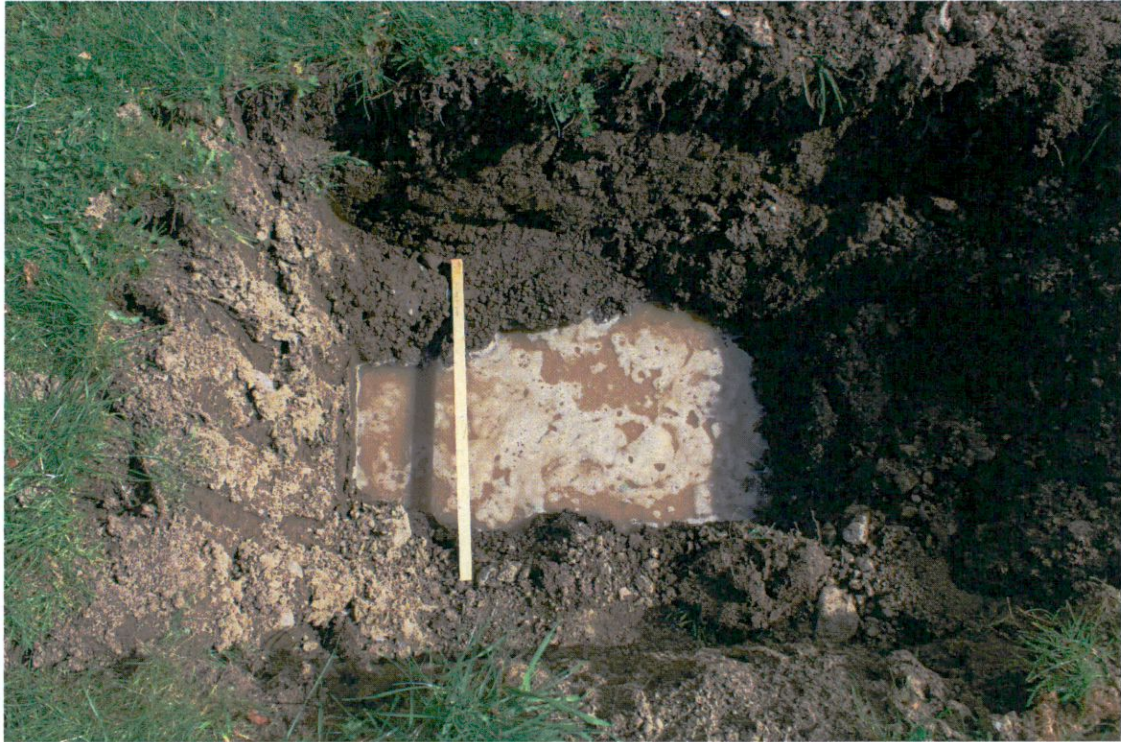
PHOTOGRAPH NO. 3 - TEST HOLE LOCATION



PHOTOGRAPH NO. 4 - TEST HOLE NO. 1



PHOTOGRAPH NO. 5 - TEST HOLE NO. 2



PHOTOGRAPH NO. 6 - TEST HOLE NO. 3



Water Management Solutions

Klargester BioDisc[®] Domestic Sewage Treatment Plant



kingspan.ie/klargester

Klargester BioDisc® Domestic Sewage Treatment Plant



The Klargester domestic BioDisc® is engineered to treat wastewater to the highest level of standards and offers one of the lowest lifetime costs compared to other treatment processes.

Each Klargester BioDisc® provides an engineered package solution to meet a wide range of applications and discharge qualities. It is designed to ensure 100% compliance with industry requirements including international regulations such as EN 12566-3.



Control Panel

Product Benefits

- Utilises Rotating Biological Contactor technology.
- Low running costs.
- Low level visibility with a lockable child-proof cover – safe for children and pets.
- For NIEA, BA-BC models deliver 95% pollution removal, whilst the BioDisc+P achieves 97.8% for BOD removal.
- 10 year warranty options available when purchased with a service and maintenance plan.
- Supplied with a control panel and alarm.
- Managed Flow System.
- Totally silent in operation.
- The most stable process in the market.
- Controls the discharge volume.

Improved performance to 97.8% BOD removal with our new BioDisc+P model (NI Region only)

S.R.66:2015 Compliant

Applications:

The Klargester domestic BioDisc® BA-BC range is suitable for a variety of applications including:



Single & Multiple Homes



Barn Conversions



Small Offices



Light Industrial Premises



Farms

Klargester BioDisc®

How it Works



The Rotational Biological Contactor

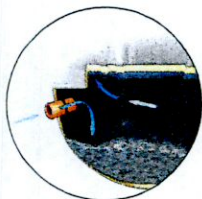
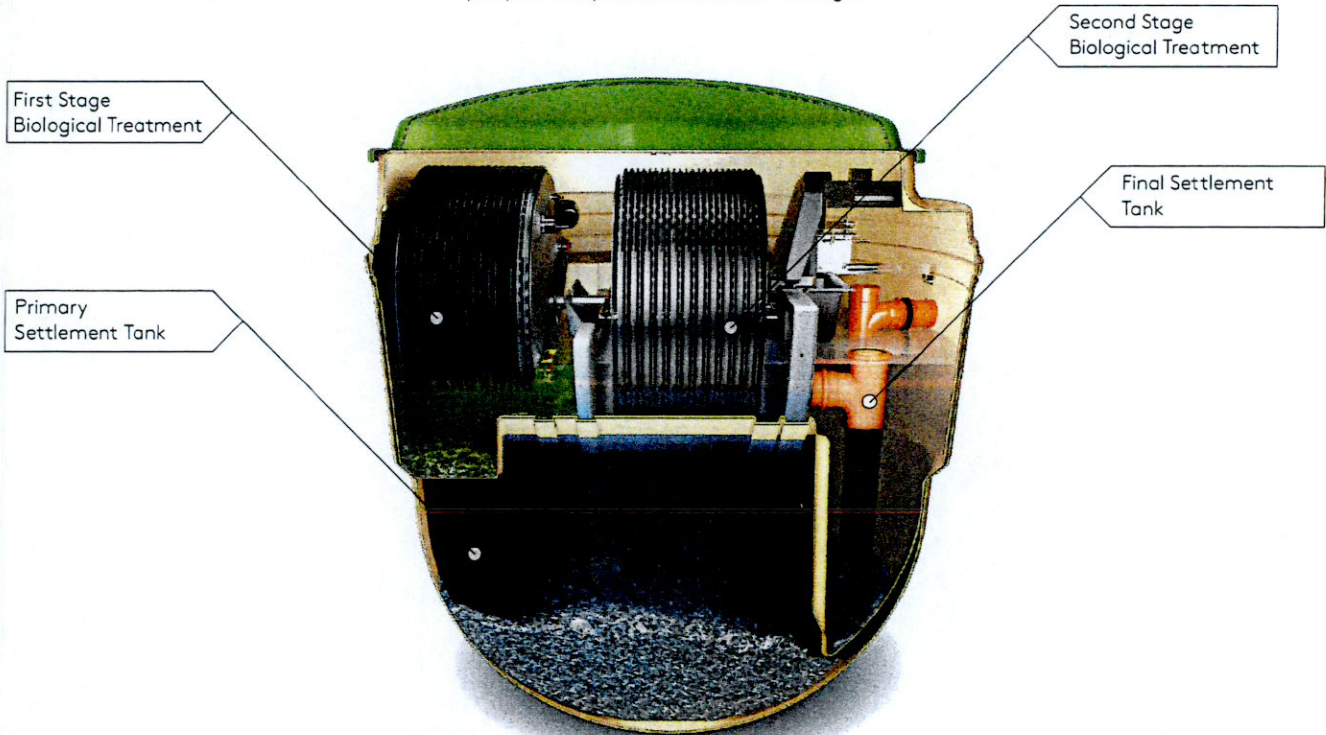
The RBC is central to the operation of each Klargester BioDisc®. It supports a biologically active film or biomass onto which aerobic micro-organisms, naturally found in sewage, become established. Natural breakdown of sewage can then occur as described below.

The RBC comprises banks of vacuum formed polypropylene media supported by a steel shaft. This is slowly rotated by a low energy consumption electric motor and drive assembly.

Our robust Klargester BioDisc® models cater for properties housing between 4-18 people. The premium BioDisc® sewage

treatment system is available in four sizes for all types of domestic applications.

For single house applications we offer the BA and BA-X models and, for multiple homes, the Klargester BB and BC BioDisc® models offer the perfect solution.



01

Primary Settlement Tank

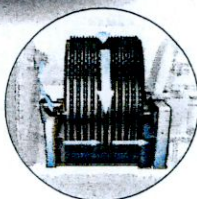
Wastewater and sewage flows into the primary settlement tank where the large solids are retained for future removal.



02

First Stage Biological Treatment

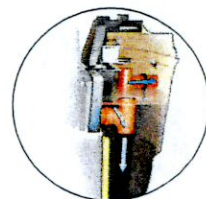
The liquor and fine solids then flow into the Biological Treatment Zone 1 where the first stage of treatment occurs.



03

Second Stage Biological Treatment

The liquor is then fed forward at a controlled rate into Biological Treatment Zone 2 for further cleaning.



04

Final Settlement Tank

The clean liquid passes into the final settlement tank where it can be discharged to ground or watercourse.

More than 60
years experience



Technical Specifications



Model Reference	BA*	BA-X	BB	BC
Population Equivalent (Std Flow)	6	9	12	18
Maximum Daily BOD (kg)	0.36	0.54	0.72	1.08
Maximum Daily Flow (m ³)	1.2	1.8	2.4	3.6
Ø/Width (mm)	Ø1995	Ø1995	Ø1995	Ø2450
Length (mm)	-	-	-	-
Inlet Invert depth (mm)	450/750/1250	450/750/1250	450/750/1250	600/1100
Depth Below Inlet Invert (mm)	1400	1400	1400	1820
Outlet Invert depth (mm)	1315	1315	1315	1735
Overall Height (mm)	2160/2460/2960	2160/2460/2960	2160/2460/2960	2825/3325
Height to Rim of Cover (mm)	1945/2245/2745	1945/2245/2745	1945/2245/2745	2485/2985
Empty Weight (kg)	310/325/380	310/325/380	335/350/405	650/750
Standard Power Supply	1 phase	1 phase	1 phase	1 phase
Motor Rating - 1 Phase (Watts)	50	50	50	75
Full Load Current 1 Phase (amps)	0.51	0.51	0.51	1.1
Optional Power Supply	N/A	N/A	N/A	3 phase
Motor Rating - 3 Phase (Watts)	N/A	N/A	N/A	90
Full Load Current 3 Phase (amps)	N/A	N/A	N/A	0.38
Sludge Return Pump Rating (watts)	250	250	250	250

* BA BioDisc - S.R.66:2015 compliant.
Pumped Outlet Available on BA, BA-X, BB models.

Performance and Compliance

- > Certified to European Standard BS EN 12566 Part 3.
- > Performance certified to achieve 10mg/l BOD, 15mg/l SS and 3.8mg/l ammonia.
- > Fully marked in line with the CPR 2013.
- > Building control and S.R.66:2015 compliant (BA BioDisc).

Case Studies



BioDisc® Sewage Treatment Plants: Reliable and Low-Cost to Run



A Klargester BioDisc® sewage treatment plant, installed in 1990, has been trouble-free for its owner ever since, requiring very little on-going maintenance.

Engineers from Kingspan's local Accredited Installer for the Klargester Product Range were recently asked to undertake a routine service. The engineers only needed to replace some of the nylon bushes (replaced with drive belts in more recent models) that help run the Rotational Biological Contactor (RBC), which is central to the working of each Klargester BioDisc®.

"Klargester BioDisc® sewage treatment plants are incredibly reliable and low cost to run, I've had no problems with it at all," said the homeowner. "I'm very happy to recommend the Klargester BioDisc®."

Treating wastewater and capturing rain in Barnstorming Build



BioDisc sewage treatment plant installed in award-winning 19th Century barn conversion.

A beautiful, award-winning 19th Century barn conversion with sustainability built into the fabric of the building, needed an effective off-mains drainage solution and to reduce its reliance on mains water. The farm had previously been served by a septic tank, but the development of the barn gave the opportunity for an upgrade in the drainage solutions.

Our recommended solution was a Klargester BioDisc® sewage treatment plant to service both the conversion and the neighbouring farmhouse; this highly efficient solution will remove up to 95% of the pollutants in sewage effluent. We also supplied a Raintrap rainwater harvesting system, to capture rainwater for external uses such as watering plants and cleaning farm vehicles. The barn conversion has been awarded the prestigious LABC Building Excellence awards for its build quality and the sustainability quotient.

A quiet solution for a 4-bedroom property and the neighbours



Having consulted local Klargester experts, a 4-bedroom property located on a relatively small plot of land, installed a Klargester BA BioDisc® sewage treatment system connected to the surface water drainage culvert.

Sited in a central village location, a system powered by an air blower may have caused the normally-quiet humming of the blower to reverberate around the high stone walls surrounding the garden and become a nuisance.

For this principle reason, the unique Klargester BioDisc® sewage treatment system was recommended. The motor-driven rotating discs inside the system, provide the treatment for incoming sewage, so there is no external air blower to locate and maintain.

As the Klargester BioDisc® provides full treatment of sewage, suitable for discharge directly into a watercourse, the connection to the drain in this restricted area was ideal for the customer. Being a straightforward installation of a compact system, the entire installation only took 3 days from start to finish!

Head Office

Kingspan Environmental Ltd
180 Gilford Road
Portadown, Co. Armagh
BT63 5LF
T: +44 (0) 28 3836 4400

Ireland

Unit 1a, Derryboy Road
Carnbane Business Park
Newry, BT35 6QH
T: +44 (0) 28 3026 6799
E: water-IE@kingspan.com

Norway

Kingspan Miljø AS
Skiveien 42, 1410 Kolbotn,
Norway
T: +47 22 02 19 20
E: avlopslosninger@kingspan.com

UK

College Road North,
Aston Clinton, Aylesbury,
Buckinghamshire, HP22 5EW
T: +44 (0) 1296 633000
F: +44 (0) 1296 633001
E: water@kingspan.com

Germany

Siemensstr. 12a, D-63263
Neu-Isenburg, Deutschland
T: +49 (0) 6102 3686700
E: wasser@kingspan.com

Poland

Topolowa 5
62-090
Rokietnica
T: +48 61 660 94 71
E: woda@kingspan.com

Australia

Kingspan Environmental Pty Ltd
8 Bessemer St
Blacktown NSW 2148
T: 02 8889 5400
Toll Free: -1300 736 562
E: sales.au@kingspan.com