

Date: March 19, 2026

To: An Coimisiún Pleanála

Re: ACP-323824-25 — Submission regarding Water Quality Observations from the Development Applications Unit (DAU).

Dear Sir/Madam,

On behalf of Mr. Colm Quigley, we submit this response to the observations made by the Development Applications Unit (DAU) in their correspondence dated January 16, 2026. This letter specifically addresses the technical queries regarding water quality, separation distances, and system capacity as outlined on pages 5 and 6 of the report .

### 1. Correction of Separation Distances and Unit Locations

The DAU expresses concern regarding secondary treatment units allegedly located within 10m and 30m of the shoreline. We wish to clarify the proposed design configuration:

**Wastewater Treatment (WWT) Unit Location:** The proposed 4.0m<sup>3</sup> BAF (Biological Aerated Filter) unit is located **54.7m from the lakeside**. This exceeds the minimum 50m requirement established by the EPA Code of Practice (COP) 2021.

- **Pumping Mechanism:** While Cabin 2 is situated **22.5m** from the lakeshore, it does **not** contain a treatment unit. Instead, it utilizes an internal **Saniflo SFA Sanicubic 2 Classic macerator**. This sealed unit will pump raw wastewater **22.90m upgradient** to the primary BAF treatment unit located further inland.

### 2. Decommissioning and Water Quality Protection

The DAU highlighted the lack of a decommissioning assessment for existing units. We commit to the following:

- **Compliance:** All decommissioning and installation works will be conducted in strict accordance with the **EPA COP 2021**.
- **Supervision:** The process will be overseen by a FETAC Level 6 accredited site assessor to ensure no ingress of contaminants into the Lough Derg SPA during the transition.
- **Pathogen Protection:** The proposed **Eurotank TER3 tertiary system** is certified to achieve a **>99% reduction** in E.coli and Coliforms, ensuring that even in "Extreme" vulnerability conditions, the risk to groundwater is mitigated.

### 3. Percolation Area Capacity and Site Loading

The DAU queried the total population equivalent (PE) and the size of the infiltration area.

- **System Capacity:** The proposed 4.0m<sup>3</sup>BAF unit is specifically sized to handle an **8 PE load** from the two new cabins.
- **Infiltration Area:** A dedicated **30m<sup>2</sup> tertiary infiltration area** has been designed for these cabins. Based on a manual calculation of the Subsurface (P) value at **14.03** and Surface (T) value at **13.39**, the site has proven highly suitable for assimilating these specific hydraulic loadings.
- **Separation:** By utilizing a dedicated system for the cabins, we ensure the existing dwelling's system is not overloaded, maintaining a clear separation of effluent streams.

### 4. Mitigation of SPA Impact

To address the concern regarding "poor quality discharge", the proposed tertiary system reaches high-performance effluent quality:

- **BOD:** 2 mg/l
- **Suspended Solids:** 4mg/l
- **Total Phosphorus:** 0.6 mg/l

This level of treatment, combined with the **1.5m of unsaturated soil** maintained beneath the drainage stone , provides a robust buffer that protects the Lough Derg SPA from nutrient enrichment and microbial pollution.

**Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)**

The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



## Site suitability assessment / Percolation test



We trust this report provides the necessary technical assurance for the progression of this application. Should you require further clarification, please do not hesitate to contact us.

Yours faithfully,

*John Fanning EPA Site assessor.*

**John Fanning**

EPA Approved Site Assessor (FETAC Level 6)

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The proposed combination of the Eurotank BAF2 (secondary treatment) and Eurotank TER3 (tertiary treatment) is designed to achieve high-performance effluent quality, specifically to protect the sensitive environment of Lough Derg.

Based on the PIA GmbH test results and technical specifications included in the report, the system is certified to reach the following reduction levels:

### Effluent Quality Standards

The system far exceeds minimum Irish standards, achieving significant reductions in organic and bacterial contaminants:

- **BOD (Biochemical Oxygen Demand):** Reduced to **2 mg/l**.
- **SS (Suspended Solids):** Reduced to **4 mg/l**.
- **NH4-N (Ammonium Nitrogen):** Reduced to **0.3 mg/l**.
- **Total Phosphorus (P):** Reduced to **< 0.6 mg/l**.
- **Pathogen Removal (E.coli & Coliforms):** Achieves **> 99% reduction**.

### Certified Efficiency Percentages

The technical data provided in the PIA Performance Results (Page 44) highlights the cumulative efficiency of the BAF2 + TER3 range:

Parameter	Removal Efficiency (%)
COD (Chemical Oxygen Demand)	95.4%
BOD (Biochemical Oxygen Demand)	98.2%
SS (Suspended Solids)	97.7%
NH4-N (Ammonium Nitrogen)	98.6%

### Environmental Safeguards

Because Cabin 1 is located only **22.5m from the lakeshore**, the use of the internal macerator pumped system is critical. The effluent in the tertiary module is treated to a level where it can be safely discharged into the **30m<sup>2</sup> tertiary infiltration area**, ensuring that 1.5m of unsaturated soil remains beneath the drainage stone for final polishing before reaching the water table.

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The on-site assessment, conducted in December 2021, indicates that the soil is highly suitable for wastewater treatment due to its well-drained, grainy structure.

Test Parameter	Result	Status/Requirement
Trial Hole Depth	1.9 meters	Bedrock encountered at base
Water Table	Not encountered	No ingress after 48 hours
Subsurface Value (\$P\$)	14.03 min/25 mm	Suitable (3 - 20)
Surface Value (\$T\$)	13.39 min/25 mm	Suitable (3 - 20)
Unsaturated Soil Depth	1.5 meters	Exceeds 0.9m tertiary requirement

#### Recommended Separation Distances

The proposed system must maintain minimum distances to protect local water sources and neighboring properties.

The following table compares the **EPA 2021 Code of Practice requirements** (as listed in the report) against the **actual site measurements**:

Feature	EPA Min. Requirement	Actual Site Distance
Lake (Lough Derg)	50 meters	54.7 meters from WWT unit
Public Water Supply	60 meters	175 meters (Cornode supply)
Domestic Well	25–45 meters*	250 meters (Private well)
Neighboring Dwelling	7–10 meters	Distances met to South/East/West
Site Boundary	3 meters	Minimum distance confirmed
Roads	4 meters	Access road is to the South

**Note on Cabin 1:** While the main treatment unit is over 50m from the lake, **Cabin 1** is located only **22.5 meters** from the lakeshore. To mitigate risk, an internal **Saniflow macerator** will pump its waste 22.9 meters away to the primary BAF treatment unit located further inland.

#### System Design Conclusion

Because the site has "Extreme" groundwater vulnerability and is adjacent to a sensitive area (Lough Derg), the assessor has specified a **Tertiary Treatment System**. This involves:

- 1) **Secondary Treatment:** A 4.0m<sup>3</sup> BAF unit to treat raw sewage.
- 2) **Saniflow macerator with integrated pump.**
- 3) **Tertiary Treatment:** Eurotank TER3 concrete pods for high-level pathogen and nutrient reduction.
- 4) **Final Disposal:** A 30m<sup>2</sup> tertiary infiltration area over 300mm of drainage stone.

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## 1) Table of Contents

- **Site Assessor Information:** John Fanning, Drainpower Environmental Services Ltd.
- **Property Details:** Colm Quigley, Cornode Garykennedy, Nenagh, Co. Tipperary (Eircode: E45CY94).
- **Compliance Statement:** Report completed in accordance with EPA Code of Practice (COP) 2021.
- **GPS Coordinates and Altitude:** Site location details and mapping.

## 2. Geo-Located Images & Desk Study Maps

- **Satellite Imagery:** Local area overview.
- **NPWS Designations:** Special Protection Area (SPA) details for Lough Derg.
- **Historic Environment Viewer:** Identification of nearby monuments and ancient mining complexes.
- **Geological & Groundwater Data:**
  - Bedrock Type: Old Red Sandstone.
  - Soil/Subsoil Type: Till derived from lower Palaeozoic rocks.
  - Aquifer Category and Vulnerability: Locally Important (Li) with "Extreme" vulnerability.
  - Groundwater Protection Response: R21.

## 3. Appendix A: Site Characterisation Form

- **1.0 General Details:** Population equivalent (8 PE) for two self-contained log cabins.
- **2.0 Desk Study:** Assessment of potential suitability and targets at risk (Lough Derg and local water supplies).
- **3.0 On-Site Assessment:**
  - **3.1 Visual Assessment:** Landscape position, slope, land use, and proximity to surface water/wells.
  - **3.2 Trial Hole Assessment:** Detailed log of soil horizons (topsoil and gravel clay) down to bedrock at 1.9m.
  - **3.3(a) Subsurface Percolation Test:** Standard and manual calculation of Subsurface values.
  - **3.3(b) Surface Percolation Test:** Determination of Surface values for soil treatment.
- **4.0 Conclusion of Site Characterisation:** Determination of development suitability and discharge route to groundwater.
- **5.0 Selected DWWTs:** Proposal for a 4.0m<sup>3</sup> BAF unit, Internal pumped Saniflow unit, tertiary treatment system, and 30m<sup>2</sup> infiltration area.
- **6.0 Treatment System Details:** Design specifications, hydraulic loading rates, and nutrient reduction performance.
- **7.0 Site Assessor Details:** Qualifications and indemnity insurance.

## 4. Photographic Evidence & Site Inspection

- **Visual Site Aspects:** North, South, East, and West views of the property.
- **Soil Testing Documentation:**
  - Trial hole excavation images.
  - Subsurface and Surface percolation test hole locations.
  - Soil texture testing (Dilatancy and Ribbon tests).
- **Existing Infrastructure:** Images of current waste water treatment units on site.

## 5. Technical Specifications & Product Data

- **Saniflo SFA Sanicubic 2 Classic:** Two-pump macerator station for lifting waste water.
- **Euro Tank Ter 3:** Concrete packaged tertiary treatment system specifications and operation principles.
- **Kingspan Bioficient:** Moving-bed-biofilm reactor (MBBR) system overview and installation manual.

## 6. Regulatory Compliance & Accreditation

- **EPA Reference Tables:**
  - Table 10.1: Infiltration area design for tertiary treatment.
  - Table 6.2: Minimum separation distances.
  - Table 6.3: Minimum unsaturated soil depth requirements.
  - Table 12.1: Maintenance and monitoring schedules.
- **Assessor Accreditations:** Kingspan Klargest Accredited Installer and FETAC Level 6 certification.
- **Insurance Verification:** Combined Liability and Professional Indemnity details.

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## SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



### Site Assessor : Mr John Fanning

### Drainpower Environmental Services Ltd,

Pallasmore, Portroe, Nenagh, Co. Tipperary.  
Mobile 086 050 5454 Email [info@siteassessment.ie](mailto:info@siteassessment.ie)

### Site Suitability Assessment - Geo Located Images :

**Property : Colm Quigley Cornode Garykennedy Nenagh E45CY94**

**GPS Coordinates (ED50) E 175262 N 183892**



**BUILD**



**BUILD**

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# SEWAGE TREATMENT SYSTEMS

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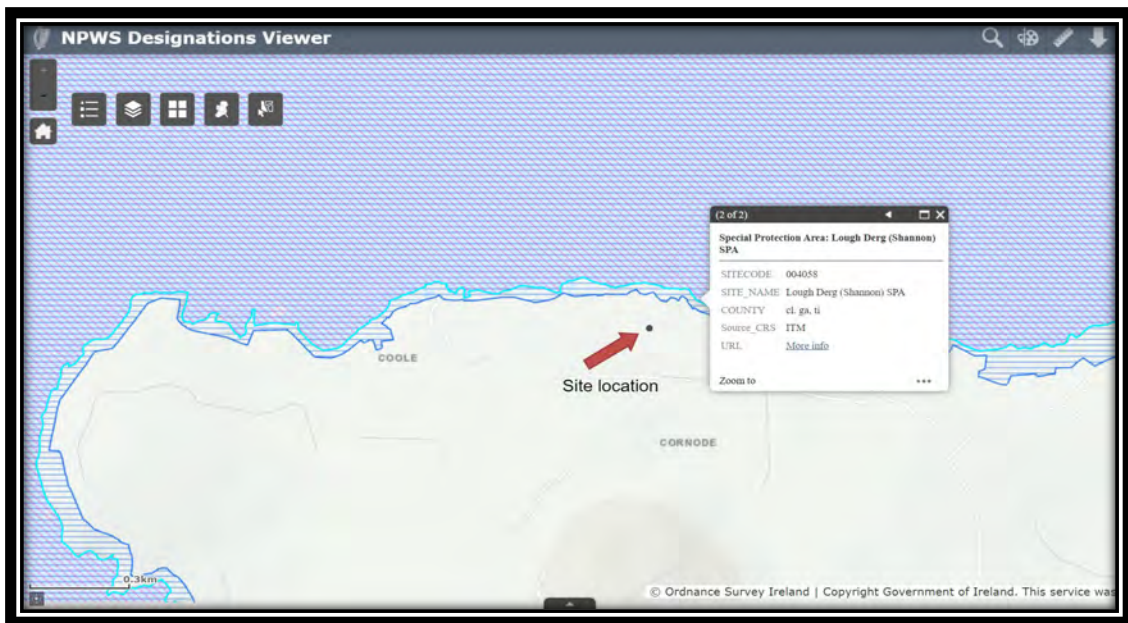


## Housing Density.

2



## S.A.C Details.



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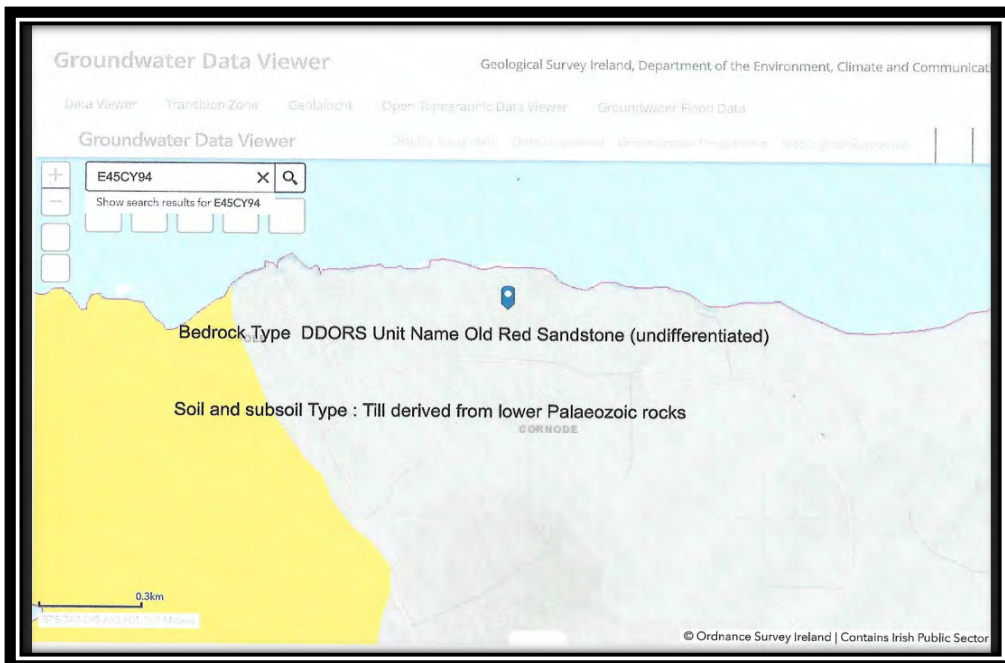


## Monuments and historical details.

3



## Bedrock and soil details





## Ground Water protection response R21

4

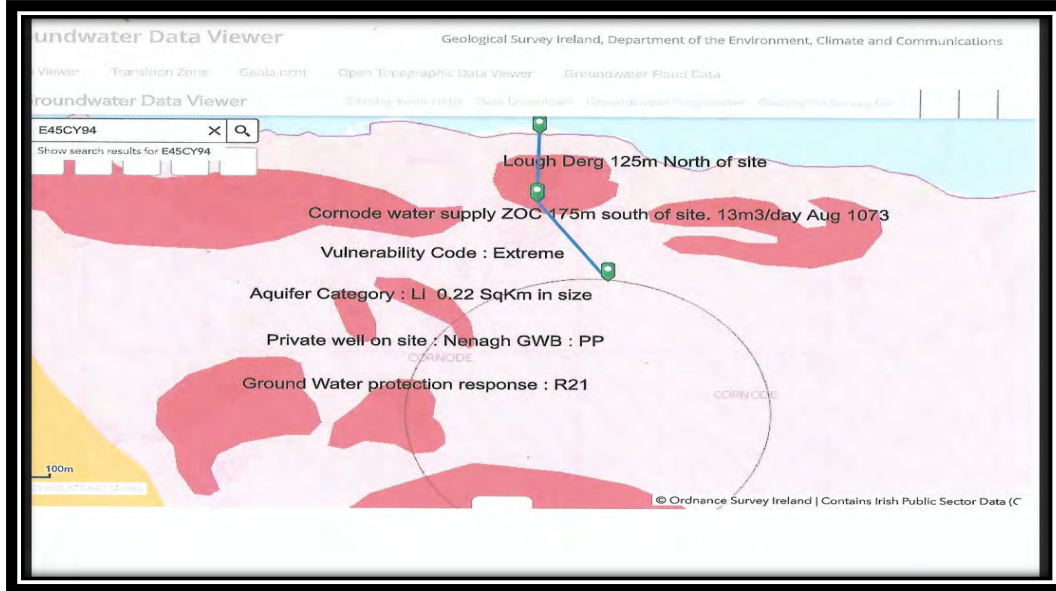


Table 2: Response Matrix for On-site Treatment Systems

VULNERABILITY RATING	SOURCE PROTECTION AREA *		RESOURCE PROTECTION Aquifer Category					
			Regionally Important		Locally Important		Poor Aquifers	
	Inner (SI)	Outer (SO)	RK	Rf/Rg	Lm/Lg	L1	P1	Pu
Extreme (E)	R3 <sup>a</sup>	R3 <sup>b</sup>	R2 <sup>1</sup>	R2 <sup>2</sup>	R2 <sup>1</sup>	R2 <sup>1</sup>	R2 <sup>1</sup>	R2 <sup>1</sup>
High (H)	R2 <sup>a</sup>	R2 <sup>b</sup>	R2 <sup>1</sup>	R1	R1	R1	R1	R1
Moderate (M)	R2 <sup>a</sup>	R2 <sup>b</sup>	R1	R1	R1	R1	R1	R1
Low (L)	R2 <sup>a</sup>	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 DELG/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.

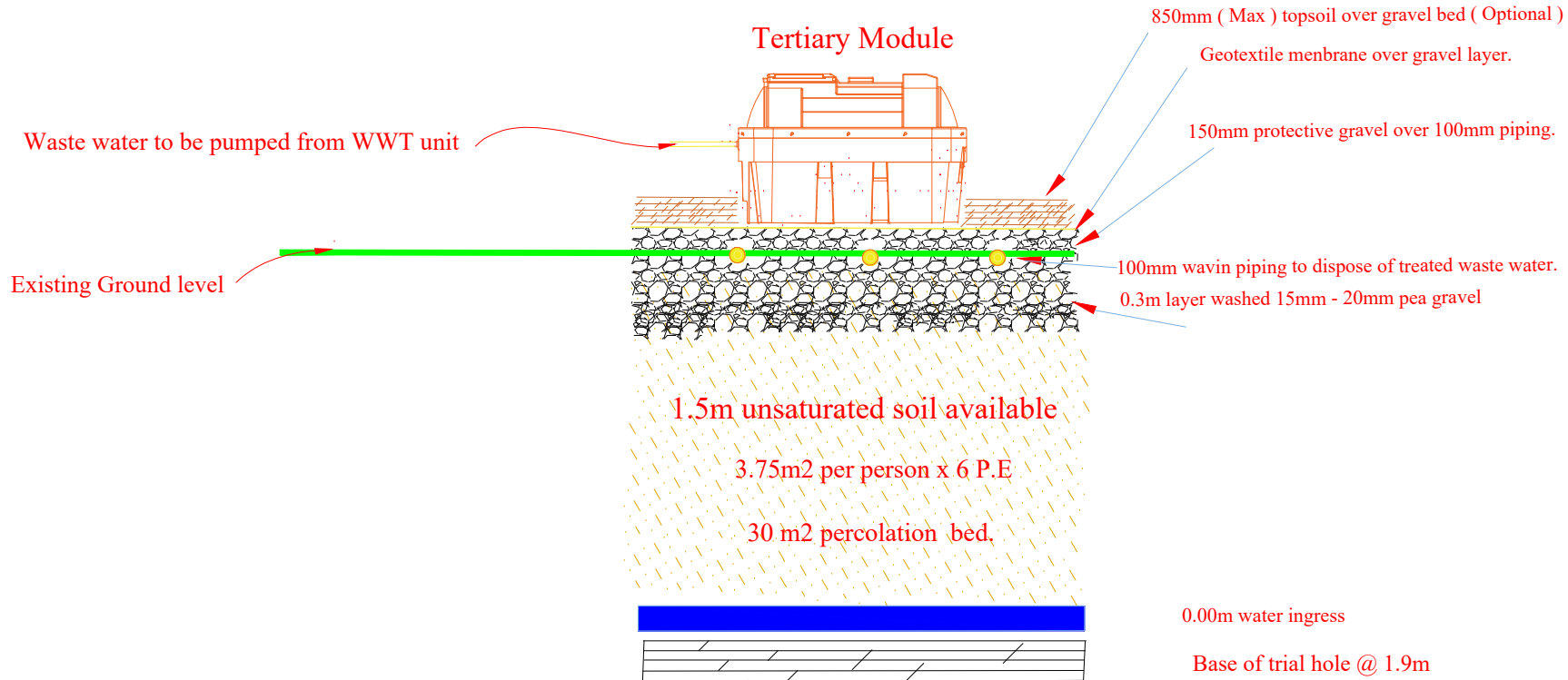
<b>R1</b>	Acceptable subject to normal good practice (i.e. system selection, construction, operation and maintenance in accordance with EPA (2000)).
<b>R2<sup>1</sup></b>	Acceptable subject to normal good practice. Where domestic water supplies are located nearby, particular attention should be given 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.





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**01 Waste Water Treatment Plant & Percolation Bed**

Scale 1:50 @ A3

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Contact: GPS E : 175260, N : 183889	
Date: 05.10.23	
Paper size: A3	CTB file: CTB_FILE LTScale: LT_SCALE

Drawn and checked by : John Fanning

File Ref.	CAD sections for planning application	Drawing No.	Rev.
		JOB_NO	DWG_NOREV

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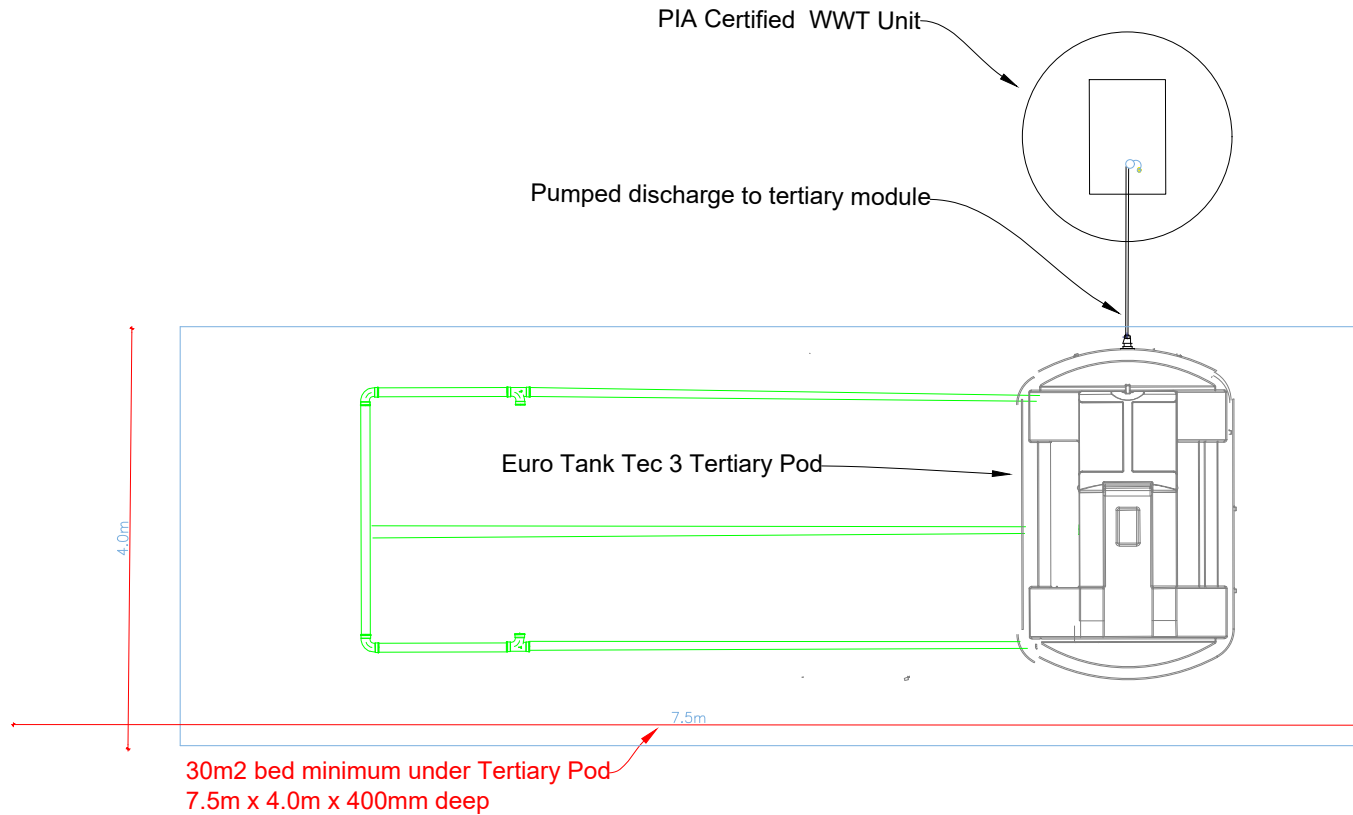


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Project No. **JOB\_NO**      Drawing No. **DWG\_NOREV**      Rev. **1**

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# APPENDIX A: SITE CHARACTERISATION FORM

File Reference:

## 1.0 GENERAL DETAILS (From planning application)

Prefix: Mr  First Name:  Surname:

Address:  Site Location and Townland:

Number of Bedrooms: 2 x 2  Maximum Number of Residents:

Comments on population equivalent

2 x double bedrooms in 2 self-contained pods.  
This assessment is to provide a waste water solution for 2 No self-contained log cabins. Each log cabin has 2 double bedrooms.

Proposed Water Supply:

Mains  Private Well/Borehole  Group Well/Borehole

## 2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type):

Subsoil, (Specify Type):

Bedrock Type:

Aquifer Category: Regionally Important  Locally Important  LI  Poor

Vulnerability: Extreme  High  Moderate  Low

Groundwater Body:  Status

Name of Public/Group Scheme Water Supply within 1 km:

Source Protection Area: ZOC  SI  SO  Groundwater Protection Response:

Presence of Significant Sites (Archaeological, Natural & Historical):

Past experience in the area:

Comments:

(Integrate the information above in order to comment on: the potential suitability of the site, potential targets at risk, and/or any potential site restrictions).

The protection response is R21 therefore suitable to percolate, attenuate and treat the waste water generated from the dwelling house. Particular attention will be given to subsoil depth over bedrock and the risk of microbial pollution is minimized. A tertiary system may be necessary to further treat the water and further treat the waste water to reduce phosphorus over enrichment. As Lough Derg is located on the Northern boundary, particular care will be given to depth of subsoil over bedrock or the water table. 0.9 meters of unsaturated soil for water treatment unit with a polishing filter tertiary system. The risks are the Ground water, Lough Derg 150m North and Cornode deep well yield of 13m<sup>3</sup> per day. Bored August 1973

**Note:** Only information available at the desk study stage should be used in this section.

## 3.0 ON-SITE ASSESSMENT

### 3.1 Visual Assessment

Landscape Position:

Slope: Steep (>1:5)  Shallow (1:5-1:20)  Relatively Flat (<1:20)

Slope Comment

Surface Features within a minimum of 250m (Distance To Features Should Be Noted In Metres)

Houses:

Existing Land Use:

Vegetation Indicators:

Groundwater Flow Direction:

Ground Condition:

Site Boundaries:

## 3.0 ON-SITE ASSESSMENT

### 3.1 Visual Assessment (contd.)

Roads:

Access rd to the South

Outcrops (Bedrock And/Or Subsoil):

None visible

Surface Water Ponding:

None

Lakes:

Lough Derg 150m to the North of the trial hole.

Beaches/Shellfish Areas:

None

Wetlands:

None

Karst Features:

None

Watercourses/Streams:\*

Lough Derg 150m North.

\*Note and record water level

## 3.0 ON-SITE ASSESSMENT

### 3.1 Visual Assessment (contd.)

Drainage Ditches:\*

No Drainage ditches. No standing water. See attached GPS images

Springs:\*

None

Wells:\*

Private well located to the entrance of the dwelling site, 250m South of Trial hole.

Comments:

(Integrate the information above in order to comment on: the potential suitability of the site, potential targets at risk, the suitability of the site to treat the wastewater and the location of the proposed system within the site).

The desk study and visual inspection of the site indicate that there are no inhibiting factors in commissioning a waste water system and a soil polishing filter on site. The site is very well drained and the homes within the 250m zone have septic tank systems and raised percolation beds commissioned. The existing dwelling has 2 tertiary modules placed on a disposal bed, commissioned to provide additional treatment for the waste water from the waste water treatment unit.

There are no indicators on the site to determine the disposal area under the tertiary modules which service the main dwelling adjacent to the two cabins.

\*Note and record water level

**3.2 Trial Hole** (should be a minimum of 2.1m deep (3m for regionally important aquifers))

To avoid any accidental damage, a trial hole assessment or percolation tests should not be undertaken in areas which are at or adjacent to significant sites, (e.g. NHAs, SACs, SPAs, and/or Archaeological etc.), without prior advice from National Parks and Wildlife Service or the Heritage Service.

Depth of trial hole (m):

Depth from ground surface to bedrock (m) (if present):

Depth from ground surface to water table (m) (if present):

Depth of water ingress:  Rock type (if present):

Date and time of excavation:   Date and time of examination:

Depth of Surface and Subsurface Percolation Tests	Soil/Subsoil Texture & Classification**	Plasticity and dilatancy***	Soil Structure	Density/ Compactness	Colour****	Preferential flowpaths
0.1 m	Topsoil	Threads 3,2,2 Ribbons 75,60,60 Dilatancy Yes	Granular	Compact	Brown	Grass roots
0.2 m						
0.3 m						
0.4 m	S1 2 3					
0.5 m	GRAVEL Clay	Threads 2,3,2 Ribbons 50, 40,50 Dilatancy No	Grainy structureless	Uncompact	Brown	Occasional stones and cobbles
0.6 m						
0.7 m						
0.8 m						
0.9 m						
1.0 m						
1.1 m						
1.2 m						
1.3 m						
1.4 m						
1.5 m						
1.6 m						
1.7 m						
1.8 m	Bedrock @ 1.9m					
1.9 m						
2.0 m						
2.1 m						
2.2 m						
2.3 m						
2.4 m						
2.5 m						
2.6 m						
2.7 m						
2.8 m						
2.9 m						
3.0 m						
3.1 m						
3.2 m						
3.3 m						
3.4 m						
3.5 m						

Likely Subsurface Percolation Value:

Likely Surface Percolation Value:

**Note:** \*Depth of percolation test holes should be indicated on log above. ('Enter Surface or Subsurface at depths as appropriate).

\*\* See Appendix E for BS 5930 classification.

\*\*\* 3 samples to be tested for each horizon and results should be entered above for each horizon.

\*\*\*\* All signs of mottling should be recorded.

### 3.2 Trial Hole (contd.) Evaluation:

The trial hole indicated that there is 1300mm of unsaturated gravel loam earth soil under a 600mm topsoil horizon. A Subsurface test was completed at 800mm BGL within the second horizon. There was no evidence of water ingress or mottling of the soil. Indications are to install a packaged BAF unit with a pump to discharge the treated waste water to a Tertiary treatment system on 300mm drainage stone.

### 3.3(a) Subsurface Percolation Test for Subsoil

#### Step 1: Test Hole Preparation

Percolation Test Hole	1		2		3	
Depth from ground surface to top of hole (mm) (A)	800		800		800	
Depth from ground surface to base of hole (mm) (B)	1,200		1,200		1,200	
Depth of hole (mm) [B - A]	400		400		400	
Dimensions of hole [length x breadth (mm)]	300 x	300	300 x	300	300 x	300

#### Step 2: Pre-Soaking Test Holes

Pre-soak start	Date	20-Dec-2021	20-Dec-2021	20-Dec-2021
	Time	11:10	11:15	11:17
2nd pre-soak start	Date	20-Dec-2021	20-Dec-2021	20-Dec-2021
	Time	13:00	13:05	13:10

Each hole should be pre-soaked twice before the test is carried out.

#### Step 3: Measuring $T_{100}$

Percolation Test Hole No.	1		2		3	
Date of test	21-12-2021		21-12-2021		21-12-2021	
Time filled to 400 mm	11:00		10:55		11:21	
Time water level at 300 mm	11:35		11:25		11:38	
Time (min.) to drop 100 mm ( $T_{100}$ )	35.00		30.00		17.00	
Average $T_{100}$						27.33

If  $T_{100} > 300$  minutes then Subsurface Percolation value  $>120$  – site unsuitable for discharge to ground

If  $T_{100} \leq 210$  minutes then go to Step 4;

If  $T_{100} > 210$  minutes then go to Step 5;

**Step 4: Standard Method** (where  $T_{100} \leq 210$  minutes)

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta t$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta t$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta t$ (min)
1	11:35	12:25	50.00	11:30	12:30	60.00	11:38	11:56	18.00
2	12:25	13:30	65.00	12:30	13:58	88.00	11:56	12:19	23.00
3	13:30	14:50	80.00	13:58	15:30	92.00	12:19	12:48	29.00
Average $\Delta t$ Value	65.00			80.00			23.33		
	Average $\Delta t/4 =$ [Hole No.1] 16.25 ( $t_1$ )			Average $\Delta t/4 =$ [Hole No.2] 20.00 ( $t_2$ )			Average $\Delta t/4 =$ [Hole No.3] 5.83 ( $t_3$ )		

Result of Test: Subsurface Percolation Value = 14.03 (min/25 mm)

Comments:

The Subsurface value has been manually calculated at 14.03. The Subsurface result in above section changes each time the file is opened..

**Step 5: Modified Method** (where  $T_{100} > 210$  minutes)

Percolation Test Hole No.	1					
Fall of water in hole (mm)	Time Factor = $T_f$	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = $T_m$	$K_{15} = T_f / T_m$	T-Value = $4.45 / K_{15}$
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 1 = ( $T_1$ )			0.00

Percolation Test Hole No.	2					
Fall of water in hole (mm)	Time Factor = $T_f$	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = $T_m$	$K_{15} = T_f / T_m$	T-Value = $4.45 / K_{15}$
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 2 = ( $T_2$ )			0.00

Result of Test: Subsurface Percolation Value =

0.00 (min/25 mm)

Percolation Test Hole No.	3					
Fall of water in hole (mm)	Time Factor = $T_f$	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = $T_m$	$K_{15} = T_f / T_m$	T-Value = $4.45 / K_{15}$
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T- Value		T- Value Hole 3 = ( $T_3$ )			0.00

Comments:

### 3.3(b) Surface Percolation Test for Soil

#### Step 1: Test Hole Preparation

Percolation Test Hole	1		2		3	
Depth from ground surface to top of hole (mm)	0		0		0	
Depth from ground surface to base of hole (mm)	400		400		400	
Depth of hole (mm)	400		400		400	
Dimensions of hole [length x breadth (mm)]	300 x	300	300 x	300	300 x	300

#### Step 2: Pre-Soaking Test Holes

Pre-soak start	Date	20-Dec-2021	20-Dec-2021	20-Dec-2021
	Time	11:05	11:05	11:05
2nd pre-soak start	Date	20-Dec-2021	20-Dec-2021	20-Dec-2021
	Time	12:50	12:50	12:50

Each hole should be pre-soaked twice before the test is carried out.

#### Step 3: Measuring T<sub>100</sub>

Percolation Test Hole No.	1		2		3	
Date of test	21-Dec-21		21-Dec-21		21-Dec-2021	
Time filled to 400 mm	10:15		10:18		10:25	
Time water level at 300 mm	10:50		10:58		10:40	
Time to drop 100 mm (T <sub>100</sub> )	35.00		40.00		15.00	
Average T <sub>100</sub>						30.00

If T<sub>100</sub> > 300 minutes then Surface Percolation value >90 – site unsuitable for discharge to ground

If T<sub>100</sub> ≤ 210 minutes then go to Step 4;

If T<sub>100</sub> > 210 minutes then go to Step 5;

**Step 4: Standard Method** (where  $T_{100} \leq 210$  minutes)

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta T$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta T$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta T$ (min)
1	10:50	11:30	40.00	10:58	11:45	47.00	10:40	11:00	20.00
2	11:30	12:35	65.00	11:55	13:15	80.00	11:00	11:25	25.00
3	12:35	13:55	80.00	13:15	14:50	95.00	11:25	11:55	30.00
Average $\Delta T$ Value	61.67			74.00			25.00		
	Average $\Delta T/4 =$ [Hole No.1] <input type="text" value="15.42"/> ( $T_1$ )			Average $\Delta T/4 =$ [Hole No.2] <input type="text" value="18.50"/> ( $T_2$ )			Average $\Delta T/4 =$ [Hole No.3] <input type="text" value="6.25"/> ( $T_3$ )		

Result of Test: Surface Percolation Value =  (min/25 mm)

**Comments:**

Surface test recorded at 13.39. The waste water can be treated in the subsurface horizon.

**Step 5: Modified Method** (where  $T_{100} > 210$  minutes)

Percolation Test Hole No.	1					
Fall of water in hole (mm)	Time Factor = $T_f$	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = $T_m$	$K_s = T_f / T_m$	T-Value = $4.45 / K_s$
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T-Value	T-Value Hole 1 = ( $T_1$ )		<input type="text" value="0.00"/>		

Percolation Test Hole No.	2					
Fall of water in hole (mm)	Time Factor = $T_f$	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = $T_m$	$K_s = T_f / T_m$	T-Value = $4.45 / K_s$
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T-Value	T-Value Hole 2 = ( $T_2$ )		<input type="text" value="0.00"/>		

Result of Test: Surface Percolation Value =

(min/25 mm)

Percolation Test Hole No.	3					
Fall of water in hole (mm)	Time Factor = $T_f$	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = $T_m$	$K_s = T_f / T_m$	T-Value = $4.45 / K_s$
300 - 250	8.1			0.00		
250 - 200	9.7			0.00		
200 - 150	11.9			0.00		
150 - 100	14.1			0.00		
Average	T-Value	T-Value Hole 3 = ( $T_2$ )		<input type="text" value="0.00"/>		

**Comments:**

## 4.0 CONCLUSION of SITE CHARACTERISATION

Integrate the information from the desk study and on-site assessment (i.e. visual assessment, trial hole and percolation tests) above and conclude the type of system(s) that is (are) appropriate. This information is also used to choose the optimum final disposal route of the treated wastewater.

Slope of proposed infiltration / treatment area:

Are all minimum separation distances met?

Depth of unsaturated soil and/or subsoil beneath invert of gravel (or drip tubing in the case of drip dispersal system)

Percolation test result: Surface:

Sub-surface:

Not Suitable for Development

Suitable for Development

### Identify all suitable options

1. Septic tank system (septic tank and percolation area) (Chapter 7)
2. Secondary Treatment System (Chapters 8 and 9) and soil polishing filter (Section 10.1)
3. Tertiary Treatment System and Infiltration / treatment area (Section 10.2)

### Discharge Route <sup>1</sup>

Ground water

Option 6

Tertiary infiltration area  
Minimum of 3.25m<sup>2</sup> per person.  
8 PE dwelling = 3.75m<sup>2</sup> x 8 =  
30m<sup>2</sup>

## 5.0 SELECTED DWWTS

Propose to install:

and discharge to:

Invert level of the trench/bed gravel or drip tubing (m)

Site Specific Conditions (e.g. special works, site improvement works testing etc.

There will be 400mm excavated and removed from the percolation bed.  
300mm drainage stone, 15mm to 32mm, will be placed in the 30m<sup>2</sup> percolation bed.  
The Tertiary pods and 100mm wavin distribution pipes will be placed on the 300mm layer of stone.  
The waste water will be pumped to the shared tertiary filter by a float activated internal pump in the WWT unit.  
The invert level of the treated water will be at 400mm below existing ground level.  
There will be 1500m of unsaturated soil under the 300mm layer of drainage stone.

The 4.0m<sup>3</sup> BAF Waste water treatment unit will treat the waste water from both cabins. It will be located 54.7m from the lakeside.

Waste from the Cabin 2 located 47.4m from the lake shore will gravity flow into the waste water treatment unit.

An internal Sani-flow macerator will be commissioned in Cabin 1 which is located 22.5m from the lakeshore. This Macerator unit will pump the waste water 22.9m to the BAF waste water treatment unit.

<sup>1</sup> A discharge of sewage effluent to "waters" (definition includes any or any part of any river, stream, lake, canal, reservoir, aquifer, pond, watercourse or other inland waters, whether natural or artificial) will require a licence under the Water Pollution Acts 1977-90. Refer to Section 2.4.

## 6.0 TREATMENT SYSTEM DETAILS

### SYSTEM TYPE: Septic Tank Systems (Chapter 7)

Tank Capacity (m <sup>3</sup> )	<input type="text"/>	Percolation Area		Mounded Percolation Area	
		No. of Trenches	<input type="text"/>	No. of Trenches	<input type="text"/>
		Length of Trenches (m)	<input type="text"/>	Length of Trenches (m)	<input type="text"/>
		Invert Level (m)	<input type="text"/>	Invert Level (m)	<input type="text"/>

### SYSTEM TYPE: Secondary Treatment System (Chapters 8 and 9) and polishing filter (Section 10.1)

#### Secondary Treatment Systems receiving septic tank effluent (Chapter 8)

Media Type	Area (m <sup>2</sup> )*	Depth of Filter	Invert Level
Sand/Soil	<input type="text"/>	<input type="text"/>	<input type="text"/>
Soil	<input type="text"/>	<input type="text"/>	<input type="text"/>
Constructed Wetland	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>

#### Packaged Secondary Treatment Systems receiving raw wastewater (Chapter 9)

Type	<input type="text" value="SR Compliant WWT Unit"/>
Capacity PE	<input type="text" value="8"/>
Sizing of Primary Compartment	<input type="text" value="2.20"/> m <sup>3</sup>

#### Polishing Filter\*: (Section 10.1)

Surface Area (m <sup>2</sup> )*	<input type="text"/>	Option 3 - Gravity Discharge Trench length (m)	<input type="text"/>
Option 1 - Direct Discharge Surface area (m <sup>2</sup> )	<input type="text"/>	Option 4 - Low Pressure Pipe Distribution Trench length (m)	<input type="text"/>
Option 2 - Pumped Discharge Surface area (m <sup>2</sup> )	<input type="text"/>	Option 5 - Drip Dispersal Surface area (m <sup>2</sup> )	<input type="text"/>

### SYSTEM TYPE: Tertiary Treatment System and infiltration / treatment area (Section 10.2)

Identify purpose of tertiary treatment	Provide performance information demonstrating system will provide required treatment levels	Provide design information
--	---	----------------------------

The tertiary system will provide additional treatment to waste water as extra protection to Lough Derg 150m North of the site.

As per PIA Gmbh En12566/3 Test for Eurotank BAF2 and Eurotank Ter3. Combination  
 Bod 2mg/l  
 Nh4n 0.3mg/l  
 SS 4mg/l  
 Total P <0.6mg/l  
 Ecoli + coliform >00% reduction

COD 95.4%  
 BOD 98.2%  
 NH4H 98.6%  
 SS 97.7%  
 EN12566.3 :2005+A1 :2009

#### DISCHARGE ROUTE:

Groundwater	<input checked="" type="checkbox"/>	Hydraulic Loading Rate * (l/m <sup>2</sup> .d)	<input type="text" value="40.00"/>	Surface area (m <sup>2</sup> )	<input type="text" value="30.00"/>
Surface Water **	<input type="checkbox"/>	Discharge Rate (m <sup>3</sup> /hr)	<input type="text" value="0.05"/>		

\* Hydraulic loading rate is determined by the percolation rate of subsoil

\*\* Water Pollution Act discharge licence required

## 6.0 TREATMENT SYSTEM DETAILS

### QUALITY ASSURANCE:

#### Installation & Commissioning

Installation will be completed by relevant competent personnel and overseen by an approved site assessor. An appropriately trained and qualified person shall document and photograph the works and submit a commissioning cert on completion. All materials used in the commissioning of this system will be Building regulations compliant. I.e Building Regulations 2010 and all subsequent amendments and the relevant TGDs and in particular TGD - H drainage and waste water disposal 20

#### On-going Maintenance

Desludging will be completed by a licenced waste collection company which holds a current WCPO licence. This desludging process will be completed on a 3 yearly cycle and disposal certs will be retained by the house holder. Only biological waste will be allowed to be processed in the unit. The home owner has a responsibility to ensure that the Waste water treatment unit is well maintained and does not over fill or overflow to the surrounding area.

## 7.0 SITE ASSESSOR DETAILS

Company:

Prefix:  First Name:  Surname:

Address:

Qualifications/Experience:

Date of Report:

Phone:  E-mail:

Indemnity Insurance Number:

Signature: John Fanning. EPA site-assessor.



## Site Images.

5



www.Siteassessment.ie  
 Colm Quigley E45CY94 Cornode Garykennedy  
 Subsurface hole 3 400mm @ 1121am  
 21.12.2021 11:21  
 E: 175262 N: 183891  
 Altitude: 108m  
 Unnamed Road, Cornode, Co. Tipperary



6



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
Subsurface hole 3 300mm @1138am  
21.12.2021 11:38  
E: 175264 N: 183891  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



7



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
Subsurface hole 3 200mm @ 1156am  
21.12.2021 11:56  
E: 175262 N: 183892  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



**BUILD**



**BUILD**

Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



8



Company: [info@siteassessment.ie](mailto:info@siteassessment.ie)  
 Project: Colm Quigley E45CY94 Cornode Garykennedy  
 Notes: Subsurface hole 3 200mm @ 1219pm  
 Date & time: 21.12.2021 12:19  
 Irish Grid: E: 175267 N: 183892  
 Altitude: 108m  
 Address: Unnamed Road, Cornode, Co. Tipperary



**BUILD**



**BUILD**

Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
 The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



9



Company: [info@siteassessment.ie](mailto:info@siteassessment.ie)  
 Project: Colm Quigley E45CY94 Cornode Garykennedy  
 Notes: Subsurface 3 200mm @ 1246pm  
 Date & time: 21.12.2021 12:46  
 Irish Grid: E: 175278 N: 183888  
 Altitude: 108m  
 Address: Unnamed Road, Cornode, Co. Tipperary



**CONSTRUCTION AWARDS 2017**  
 Drainpower Environmental Services Ltd  
Local Hero & Sustainable Enterprise Ireland Award  
 Best Drain & Repair Service - Republic of Ireland

**BUILD**

**CONSTRUCTION & ENGINEERING AWARDS 2016**  
 Drainpower Environmental Services Ltd  
Best Drain & Repair Service - Republic of Ireland

**BUILD**

**Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)**  
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# SEWAGE TREATMENT SYSTEMS

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10



Company: [info@siteassessment.ie](mailto:info@siteassessment.ie)  
Project: Colm Quigley E45CY94 Cornode Garykenny  
Notes: Dilatancy test  
Date & time: 21.12.2021 12:28  
Irish Grid: E: 175273 N: 183893  
Altitude: 108m  
Address: Unnamed Road, Cornode, Co. Tipperary



**BUILD**



**BUILD**

Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



Company: [info@siteassessment.ie](mailto:info@siteassessment.ie)  
 Project: Colm Quigley E45CY94 Cornode Garykennedy  
 Notes: Ribbon test  
 Date & time: 21.12.2021 12:29  
 Irish Grid: E: 175261 N: 183891  
 Altitude: 108m  
 Address: Unnamed Road, Cornode, Co. Tipperary



Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
 The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.





# SEWAGE TREATMENT SYSTEMS

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13



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
Southern aspect of site  
21.12.2021 10:46  
E: 175261 N: 183889  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
No water ingress after 48 hours.  
21.12.2021 13:15  
E: 175262 N: 183892  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



**BUILD**



**BUILD**

Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



# SEWAGE TREATMENT SYSTEMS

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14



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
GRAVEL loam spoil from trial hole  
21.12.2021 11:47  
E: 175262 N: 183892  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
Eastern aspect of the site  
21.12.2021 10:47  
E: 175260 N: 183889  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



**BUILD**



**BUILD**

Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



15



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
600mm topsoil  
21.12.2021 11:43  
E: 175266 N: 183891  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



16



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
WWT unit with tertiary pods 100m South of site  
21.12.2021 10:49  
E: 175277 N: 183888  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



**BUILD**



**BUILD**

Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



17



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
Western aspect of the site  
21.12.2021 10:46  
E: 175260 N: 183889  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
Subsurface locations X 3  
21.12.2021 11:07  
E: 175261 N: 183890  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary



**BUILD**



**BUILD**

Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



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www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykennedy  
Trial hole image  
21.12.2021 11:47  
E: 175262 N: 183892  
Altitude: 108m/  
Unnamed Road, Cornode, Co. Tipperary

**CONSTRUCTION AWARDS 2017**  
Drainpower Environmental Services Ltd  
Local Authority Approved - 100% - 100% Satisfaction  
Sewerage & Drainage Services - 2017  
Best Drain & Repair Service - Republic of Ireland

**BUILD**

**CONSTRUCTION & ENGINEERING AWARDS 2016**  
Drainpower Environmental Services Ltd  
Local Authority Approved - 100% - 100% Satisfaction  
Sewerage & Drainage Services - 2016  
Best Drain & Repair Service - Republic of Ireland

**BUILD**

Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



19



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykenedy  
Trial hole 1.9m  
21.12.2021 11:42  
E: 175278 N: 183888  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary

**CONSTRUCTION AWARDS 2017**  
Drainpower Environmental Services Ltd  
Registered & Incorporated in the Republic of Ireland  
Solely owned & controlled by the company's directors. A.P.M.R. 100000000  
No. 304668200. Registered office: 1000000000

**BUILD**

**CONSTRUCTION & ENGINEERING AWARDS 2016**  
Drainpower Environmental Services Ltd  
Best Drain & Repair Service - Republic of Ireland

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www.Siteassessment.ie  
 Colm Quigley E45CY94 Cornode Garykenny  
 Surface hole 3 400mm @ 1043am  
 21.12.2021 10:43  
 E: 175260 N: 183889  
 Altitude: 108m  
 Unnamed Road, Cornode, Co. Tipperary



www.Siteassessment.ie  
Colm Quigley E45CY94 Cornode Garykenny  
Surface hole 3 300mm @ 1125am  
21.12.2021 11:25  
E: 175262 N: 183891  
Altitude: 108m  
Unnamed Road, Cornode, Co. Tipperary

# Sanicubic 2 Classic

## Grey water, black water

Sanicubic 2 Classic is a two pump station designed for the lifting of waste water from individual houses, small businesses or light commercial premises such as restaurants or pubs.

It uses the Pro X K2 macerator technology which removes waste water through a 50 mm diameter discharge pipe. The two pumps work alternately. The 5 inlets, 2 of which are side inlets, allow great flexibility in the installation of sanitaryware.



### PERFORMANCE

- Max. head : 13 m
- Max. flow rate : 15 m<sup>3</sup>/h

### PRODUCT BENEFITS

- Easily accessible with removable motors and level sensors for ease of maintenance
- Alternating operation of the 2 pumps
- 5 inlets, 2 of which are side inlets
- Less chance of clogging due to the Pro X K2 grinder technology
- Discharge in 50 mm ext. pipe



See page 10

### DELIVERED AS STANDARD



Remote wired audible and visual alarm unit (5m)



Classic control Box

### OPTIONAL EXTRAS



Isolation valve  
DN50 shut-off valve  
Product code: 1109

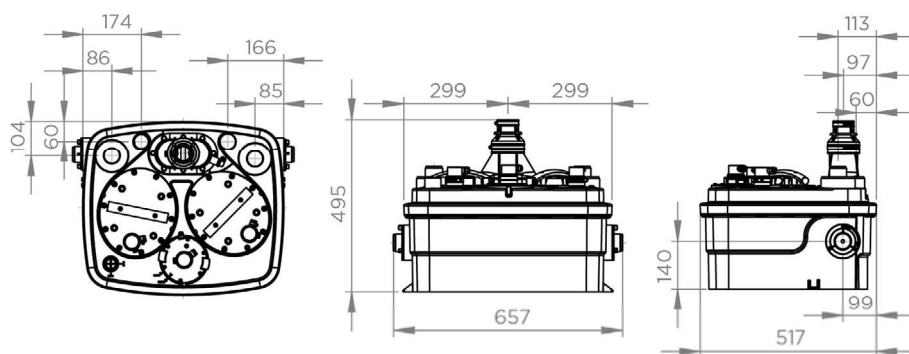


Isolation valve  
DN100 shut-off valve  
Product code: 1107/1

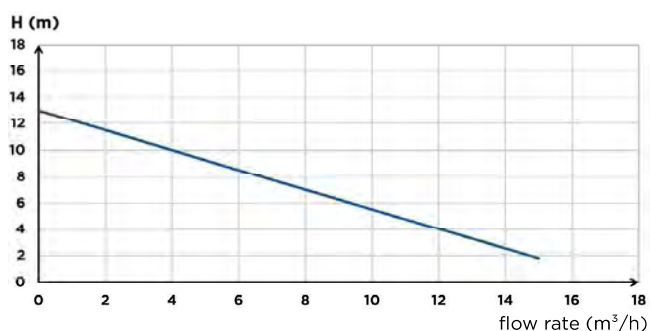


Sanicubic carbon filter  
Product code: 1108  
Barcode: 3308815077529

## DIMENSIONS



## CURVE



## CONNECTIONS



- External inlet diameter : 40/50/100/110 mm
- Discharge diameter ext. : 50 mm
- ↔ Ext. ventilation diameter : 50 mm

	Sanicubic 2 Classic
Type of control box	Classic
<b>Material</b>	
Tank	PP
Pump housing	PA 12 GF
Motor housing	PA 12 GF
Impeller	PP GF
<b>Electrical features</b>	
Voltage (V)	230
Frequency (Hz)	50-60
Power consumption P1 (W)	1500
Power output P2 (W)	1050
Mode of operation	S3 50 %
IP rating	IP68
<b>Hydraulics</b>	
Max. head (m)	13
Max. flow rate (m³/h)	15
External inlet diameter (mm)	40/50/100/110
Discharge diameter ext. (mm)	50
Ext. ventilation diameter (mm)	50
Total volume (L)	45
Useable volume (L)	17,5
ON level /OFF level (mm)	140/70
Alarm level (mm)	210
Max. temperature of the pumped liquid (5 min)	70°C
Type of impeller	Pro X K2 grinder
Type of activation	pneumatic
<b>Identification and logistics</b>	
Gross weight (kg)	35
EAN code	3308815074443
Product code	30013



## Euro Tank Ter 3 Specifications

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**PACKAGED TERTIARY Treatment Systems**

Supplied By: Tpw Systems Ltd, Wexford      Sales /Service 087 2600438  
 053/9137650    Email [tpwsystems@gmail.com](mailto:tpwsystems@gmail.com)      web: [www.TPW.ie](http://www.TPW.ie)

**Description:**

Eurotank TER3, is a CONCRETE Packaged Tertiary Treatment System which further treats effluent from a secondary treatment system example Eurotank BAF. It is an allowed form of Tertiary Treatment, *under Option section 10.3 EPA Code of Practice* ideal for most sites including difficult sites, with high vulnerability, Nutrient or Pathogen Sensitive area's and especially suited to small sites due to its small footprint.

Raw sewage enters the secondary unit by gravity from the house and is treated, effluent then leaves this unit and is pumped via a network of piping over the surface of the TER3, it then trickles down through the various layers receiving Biological treatment before final discharge to the ground. The unit is connected to a network of perforated pipes and sits on a layer of distribution gravel as a slightly raised small bed or finished at ground level, depending on the results of the percolation test.

**Eurotank TER3 is a Cost effective, Efficient method of complete on-site wastewater treatment and disposal**

**SPECIFICATION**

Population Equivalent PE	6 to 50 with configurations for 6, 9, 12, 18, 24, 36, 43, 50.	
Certification	By PIA GMBH Under EN12566/3 To Irish NSAI SR66 Standard	
Effluent Quality as per PIA Test	Bod 2mg/l Suspended Solids 4mg/l NH4N 0.3mg/l Phosphates < 6mg/l	Ecoli and Total Coliform Removal<99% Far Exceeding Irish Min Standards
Concrete	45n reinforced	

From Dwelling → BaF 2 → Ter 3 (1.2m x 2.5m) → SUBSURFACE SYSTEM (0.8m) → Percolation Area

Diameter 2.5

Infiltration Area Sized by Formulae  $Tvalue \times 0.125 \times PE$   
**Average 60m<sup>2</sup>**

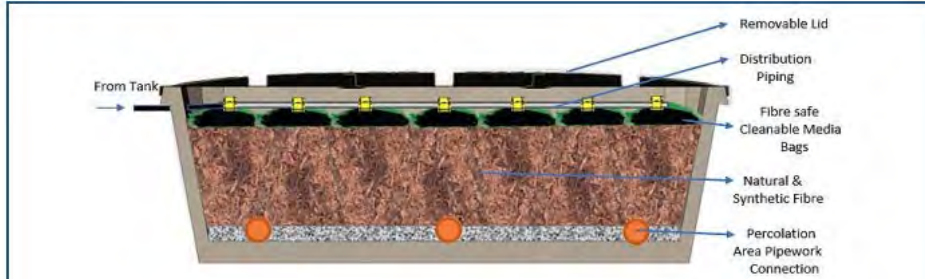
**CONSTRUCTION AWARDS 2017**  
 Drainpower Environmental Services Ltd  
Best Drain & Repair Service - Republic of Ireland

**BUILD**

**CONSTRUCTION & ENGINEERING AWARDS 2016**  
 Drainpower Environmental Services Ltd  
Best Drain & Repair Service - Republic of Ireland

**BUILD**

**Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)**  
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## Key Features

- High Effluent Quality, with superior reduction in BoD, CoD, Suspended solids, Nutrients, and Pathogens. (Best on the Irish Market!)
- Suitable for many sites including small restricted existing sites.
- Concrete unit.
- Fibre safe pre-clean system, in cleanable bags that can be shaken or washed.
- Very easy to maintain.
- Includes percolation pipe connections.



## The Aesthetic Solution To Raised Beds

## Operation Principles

Secondary treated water from the tank is pumped and distributed via a pipe network with orifice shielding.

Water is distributed evenly over the Fibre safe Bags which remove any residual solids and in particular greases which ensure long life use of the natural and synthetic mix fibre Media.

The waters then trickle through the fibre to receive final treatment and polishing before Entering the percolation pipework over a bed of stone for distribution and final discharge to underlying soils.



**Euro Tank Ter 3 PIA Certification**



## Certificate

422.01C02  
**Tpw Systems Ltd**  
 Ballyheige, Screen, Co. Wexford, Ireland, Y21A8A0  
**EN 12566-7, Annex A**  
 Small wastewater treatment systems for up to 50 PT  
**Small wastewater treatment system Eurotank Ter3, Packaged Tertiary Mod**  
 Trickle filter (pump charged)  
 Test report PIA2022-T7-422S09

---

**Evaluation of the nominal sequences of the 38-week testing**

Nominal organic daily load (influent)	0.01 kg BOD <sub>5</sub> /d		
Nominal hydraulic daily load	0.9 m <sup>3</sup> /d		
Material	Concrete		
Treatment efficiency		Efficiency	Effluent
	COD	41.7 %	37 mg/l
	BOD <sub>5</sub>	64.3 %	4 mg/l
	NH <sub>4</sub> -N*	89.2 %	0.4 mg/l
	P <sub>tot</sub>	5.0 %	5.0 mg/l
	SS	58.5 %	4 mg/l

**Evaluation of the complete 38-week testing**

Electrical consumption	3.9 kWh/d
Number of desludging	-

\* determined for temperatures  $\geq 12^{\circ}$  C in the bioreactor

---

Tested by:  
**PIA – Prüfinstitut für Abwassertechnik GmbH**  
 (PIA GmbH)  
 Hergenrather Weg 30  
 52074 Aachen, Germany

  
*Martina Wermter*  
 geprüft – tested – testé  
 Martina Wermter August 2022

  
Notified Body  
No.: 1739



  
Deutsche  
Zertifizierungsstelle  
D-PL-17712-01-00



Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)

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**Certification**

as listed on <https://www.pia-gmbh.com/en/component/download/send/9-packaged-treatment-plants/245-tpw-systems-eurotank-baf2-ter3-pdf> -- For Irish Use



## TREATMENT PERFORMANCE RESULTS

**TPW Systems Ltd**  
 Ballyheige, Screen, Co. Wexford, Ireland  
**EN 12566-3**  
 Results corresponding to EN 12566-3 and S.R. 66  
 PIA2020-SR66-2007-1024  
**EUROTANK BAF2 + TER3 (range with 7 models)**  
 Biological aerated filter + packaged tertiary treatment mod

Nominal organic daily load	0.29 kg/d															
Nominal hydraulic daily load	0.9 m <sup>3</sup> /d															
Material	Concrete															
Water-tightness	Pass															
Structural behaviour (Crushing resistance)	Pass (also wet conditions)															
Durability	Pass															
Treatment efficiency (nominal sequences)	<table border="0"> <tr> <td></td> <td>Efficiency</td> <td>Effluent</td> </tr> <tr> <td>COD</td> <td>96.6 %</td> <td>28 mg/l</td> </tr> <tr> <td>BOD<sub>5</sub></td> <td>99.3 %</td> <td>2 mg/l</td> </tr> <tr> <td>NH<sub>4</sub>-N</td> <td>99.3 %</td> <td>0.3 mg/l</td> </tr> <tr> <td>SS</td> <td>98.8 %</td> <td>4 mg/l</td> </tr> </table>		Efficiency	Effluent	COD	96.6 %	28 mg/l	BOD <sub>5</sub>	99.3 %	2 mg/l	NH <sub>4</sub> -N	99.3 %	0.3 mg/l	SS	98.8 %	4 mg/l
	Efficiency	Effluent														
COD	96.6 %	28 mg/l														
BOD <sub>5</sub>	99.3 %	2 mg/l														
NH <sub>4</sub> -N	99.3 %	0.3 mg/l														
SS	98.8 %	4 mg/l														
Number of desludging	Not more than once															
Electrical consumption	1.16 kWh/d															

Performance tested by:

**PIA – Prüfinstitut für Abwassertechnik GmbH**  
 (PIA GmbH)  
 Hergenvrather Weg 30  
 52074 Aachen, Germany

This document replaces neither the declaration of performance nor the CE marking



Verstärkt / Verstärkt July 2020

Page 1 of 12



**To whom it may concern,**

We hereby confirm that the company Tpw Systems tested the small wastewater treatment system Eurotank TER 3 according to the European standard EN 12566-3 for treatment efficiency on the testing field of PIA GmbH in Aachen. For details concerning the test according to the standard and the system design it can be referred to the test report No. PIA2020-373B09-02

During the test of the system, three additional analysis were made for each of the parameters phosphorous, e.coli and total coliforms at different points of the system. The samples were taken in the test phases 6 (nominal loading) and 8 (nominal loading with power breakdown). In Table 1 the results of the samples are shown.

PIA GmbH has a certified quality management system according to EN ISO 9001:2015 for the field "testing of wastewater equipment". PIA GmbH is accredited as testing laboratory based on EN ISO/IEC 17025:2005 and is approved by the European Commission as a testing laboratory "Notified Body" (NB 1739) according to the Construction Products Regulation (CPR) for small wastewater treatment systems for up to 50 PT according to EN 12566 Part 1, 3, 4, 6 and 7.

**Table 1: Results**

Test schedule	Test sequence	6	8*	8**	8**	Reduction [% ; n=3]
		Loading	100 %	100 %	100 %	
	Date	27.02.2020	23.04.2020	14.05.2020	16.05.2020	
Air Temperature min/max	[°C]	2/10	8/21	-	3/14	
Influent:						
E.Coli	[1/100ml]	7.500.000	6.867.000	26.030.000		
Total coliforms	[1/100ml]	1.000.000	329.000	5.560.000		
Effluent BaF2 system:						
P <sub>test</sub>	[mg/l]	1,2	-	-	4,9	
Effluent TER 3 Mod:						
P <sub>test</sub>	[mg/l]	2,8	6,1	-	5,4	
E.Coli	[1/100ml]	1090	520	5910	-	99,9
Total coliforms	[1/100ml]	300	1990	18600	-	99,6

## Tertiary pod Image



Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
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# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



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## Installation Accreditation



## Site assessor Accreditation



Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
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# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



## Insurance Cert



**SLATTERY  
SULLIVAN  
INSURANCES**

Slattery Sullivan Insurances  
Unit 2 Cudville, Ashe Road  
Nenagh, Co. Tipperary  
E45 A528

**Tel:** 067 56705  
**Email:** nenagh@sullivaninsurances.ie

**Date:** 15/05/2023 **Broker Ref:** JOHN17003

**Drainpower Environmental Services Ltd**  
C/O John Fanning  
Pallasmore, Portroe, Nenagh, Co. Tipperary  
Combined Liability Policy Number: TRI006475

To whom it may concern,

We are happy to confirm details of our above noted clients Liability Insurance, details as follows:

<b>Insured:</b>	<b>Drainpower Environmental Services Ltd</b>
<b>Insurer:</b>	iSure Insurance
<b>Business Description:</b>	Site Surveying, Site Assessments, Surveyors, Structural Surveys & Inspection Reports.
<b>Effective From:</b>	08/04/2023 to 07/04/2024
<b>Public Liability:</b>	€6.5 Million
<b>Employers Liability:</b>	€13 Million

Please note that the above serves as a summary & confirmation of cover, for further policy details, please refer to the policy document.

If you have any queries, please do not hesitate to contact me on (067) 56705.

Yours Sincerely



**Aidan Dwyer**  
Slattery Sullivan Insurances  
E: aidan@sullivaninsurances.ie


Sullivan Insurances (Limerick) Ltd. t/a Sullivan Insurances, Slattery Sullivan Insurances, Carey Corbett Sullivan Insurances is regulated by the Central Bank of Ireland.  
Directors: D.A.Sullivan A.C.I.L., L.Sullivan F.C.C.A B.B.S., B.Sullivan A.C.M.A. B.A. C.I.P., M.Henchy B.A. C.I.P. Q.F.A., Reg No. 97905



**Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)**  
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## Klargester PIA Accreditation



**PIA**  
Prüfinstitut für  
Abwassertechnik  
GmbH

### PERFORMANCE RESULTS

**Kingspan Environmental Limited**  
College Road North, Aston Clinton, Aylesbury, HP22 5EW, UK  
EN 12566-3  
Small wastewater treatment systems for up to 50 PT  
**Small wastewater treatment system Bioficient<sup>+</sup>**  
Moving-bed-biofilm reactor in a polyethylene tank  
Test report PIA2015-218B44.01

---

Nominal organic daily load*	0.29	kg BOD <sub>5</sub> /d
Nominal hydraulic daily load	0.90	m <sup>3</sup> /d
Material	Polyethylene	
Treatment efficiency (nominal sequences)	Efficiency	Effluent
	COD	91.2 % 64 mg/l
	BOD <sub>5</sub>	95.0 % 15 mg/l
	SS	96.0 % 16 mg/l
	NH <sub>4</sub> -N**	84.7 % 4.9 mg/l
	NO <sub>3</sub> **	72.6 % 17.6 mg/l
Electrical consumption	0.92	kWh/d

\*at a test influent of ≥ 300 mg/l BOD<sub>5</sub> (mean)  
\*\*determined for temperatures ≥ 12°C in the bioreactor

---

Performance tested by:  
**PIA – Prüfinstitut für Abwassertechnik GmbH**  
(PIA GmbH)  
Hergenrather Weg 30  
52074 Aachen, Germany

This document replaces hitherto the declaration of performance for the CE marking.

  
NIST logo  
No. 1728

  
Certified according to  
ISO 9001:2008

  
DAKKS  
Deutsche  
Akkreditierungsstelle  
D-PL 17733-01-00

  
Elmar Lances  
February 2015





# SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



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## 017909-01 – Bioficient® Sewage Treatment Tank

### 1 WHY YOU CAN INSTALL OUR TANKS WITH CONFIDENCE:

- They are robust, with high impact resistance, and can withstand all common chemicals they are likely to encounter.
- Our Tanks are trouble-free. No chemicals are required for bacterial action to take place.
- Our Tanks are strong, easy to move and simple to install. Full installation instructions are supplied with every tank.
- High performance, efficient treatment technology.
- Discharge to ground, river or lake.
- Designed in accordance to EU standards EN-12566 Part 3
- Minimum power use.
- An extension neck is available to allow for deeper installation on difficult sites. (Please contact our sales team).
- Our modern design means that access for desludging is easier through the wide neck.
- All our Tanks carry a 12 month warranty from date of delivery.

Unit	Storage Volume (Litres)	Standard Overall Height (mm)	Standard Inlet Invert (mm)	Standard Outlet Invert (mm)	Length (mm)	Width (mm)
BFP06	3580	1920 - 2990	500-1500	600-1600	2480	Ø1690
BFP10	5585	2245 - 3245	500-1500	600-1600	3189	Ø2010

### 2 GROUND CONDITIONS

- 2.1 Prior to installation, care should be taken to establish the depth to the water table and land drain facilities as ground conditions will determine the type of backfill materials to be used. In dry free draining soils where the ground is dry all year round i.e. the water table never rises above the base of the tank then use method of installation for DRY GROUND.
- 2.2 In clays, silts, heavy ground or badly drained ground where the water table rises above the base of the tank use method of installation for WET GROUND.

### 3 SITE PLANNING

- 3.1 British Standard BS EN 12566-3 recommends that treatment tanks should not be closer than 7 metres from a dwelling. The outlet from the tank should be well away from any source of water supply. Care should be taken to site the tank. Roads, driveways and vehicles should not be permitted within a distance equal to the depth of the unit, unless suitable structural protection is provided to the installation, to avoid damage to the tank structure.
- 3.2 Don't forget that there must be access for service vehicles during installation and desludging.
- 3.3 If the tank can only be installed where it will be subjected to a traffic load, then contact our sales team for details of any special requirements.

### 4 HANDLING & STORAGE

- 4.1 Care should be taken when handling the tank. The tank should be lifted using a rope or sling passed through the lifting points provided on the tank. The tank must be carefully lifted from the delivery vehicle and set down on to level ground. Do not roll the tank off the delivery vehicle.
- 4.2 Carry out an inspection for any damage before accepting the tank, and inspect again prior to installation, paying particular attention to the inlet and outlet pipes.





**017909-01 - BioCient® Sewage Treatment Tank**

4.3 During storage of the tank on site do not allow it to rest on these pipes at any time. The tank should always be filled with clean water during backfilling. It is desirable to temporarily cover all openings in the tank to prevent the ingress of debris during installation.

**5 EXCAVATION**

5.1 **INSTALLATION SHOULD ONLY BE CARRIED OUT BY A COMPETENT CONTRACTOR.**

5.2 The tank is supplied with a standard rock extension giving an inlet invert of 500-875mm from the top of the manhole cover to the bottom of the inlet pipe.

5.3 Extension media are available to give a maximum invert depth of 1500mm if required.

5.4 Excavate a hole according to the table below. Normal safety precautions must be adopted during excavation. Excavate a trench for the inlet and outlet pipework noting: the inlet invert selected, and that the outlet pipe is 100mm lower than the inlet pipe.

5.5 If the excavation is in unstable ground, take particular precautions to avoid a collapse of the sides of the excavation.

5.6 Make sure that any water collecting in the hole is pumped out during installation.

5.7 Tank Excavation Dimension - These dimensions assume 200 mm clearance all round the tank.

Tank Model	Maximum Overall Height (mm)	Length (mm)	Width (mm)
BFPO6	2990	2480	Q1690
BFPI0	3045	3189	Q2010

**6 DESLUDGING**

6.1 The tank has been specially designed to allow easy access for cleaning when required. The tank is desludged in the usual way by suction tanker.

6.2 When desludging, which should be undertaken at least once a year, care should be taken to avoid damage to the tank by the hose nozzle.

6.3 Desludge the primary and final settlement zones using a suction tanker. Please consult your local yellow pages, internet or similar for licensed contractors offering this service.

6.4 Remove the cover. Carefully lower the suction hose into the primary compartment, then empty the final compartment. Remove all floating and settled solids from these compartments taking care not to knock or disturb the internal pipework.

6.5 **Note. DO NOT EMPTY** the reactor compartment, this is unnecessary and if done will affect the process abilities of the system. When the primary and final compartments are emptied, the level in these compartments will drop a little.

6.6 If it is necessary to desludge the reactor compartment, following **specialist advice only**, ensure that the correct size suction hose is used. Pressure wash the media to release any solids which are binding/clumping the media, then carefully insert the suction hose. Take care not to remove any of the media when emptying. When complete, ensure all components are correctly replaced and refill the reactor with clean water.

6.7 After desludging each compartment, the primary zone should be refilled with clean water either by using a hosepipe or by running several taps in the household(s). Refill final settlement/ humus tank with a hose, whilst running in tap water into the primary.

6 of 18

**017909-01 - BioCient® Sewage Treatment Tank**

6.8 See unit start-up guidance.

**7 HOW SHOULD I INSTALL THE TANK?**

There are basically two ground types:

- Dry ground conditions - In light, totally dry, free draining soils where the water table does not rise above the base of the tank.
- Wet ground conditions - In clay or heavy soils where the water table can rise above the base of the tank.

**Step 1 (Delivery)**

Firstly you must ensure you have received all components ordered. Please check your order against the delivery ticket which will list all delivered parts. Standard delivery will consist of a storage tank and blower housing assembly. If there are any shortages or damaged components please contact us immediately. Blower housing can be installed at the civil stage but will require to be wired up by a qualified electrician.

**Step 2 (Excavation)**

Excavate a sufficient hole to suit storage tank. See previous table for dimensions. Ensure depth allows for a suitable concrete base to meet site condition requirements to prevent shrinkage. Safe excavation methodology should be followed at all times. Care should be taken not to cause undermining of foundations if tank is located close to a building. A dewatering pump may be required to remove excess water.

**Step 3 (Preparation)**

Lay the concrete base (min 300 mm). Once cement is cured level the tank into the excavation. Ensure you use the correct lifting equipment and the slings are connected to the 4-no. lifting points using appropriate shackles. Ensure tank is level and all connections line up with site pipework.

7 of 18

**017909-01 - BioCient® Sewage Treatment Tank**

**Step 4 (Backfill)**

If necessary locate a dewatering pump in the base of the excavation to remove excess water (wet sites only). Fill the tank with water to approximately 300 mm from base DO NOT OVERFILL. This can be poured in through the inlet pipe. Backfill around the tank with suitable selected material, until level with the water level in the tank. Fill tank and backfill in 300mm stages until you reach pipe connection levels. Wet Sites - Concrete Dry Sites - Pea Shingle \*Dry Site - No water table - free draining to level below tank base.

**Step 5 (Pipe Connections)**

Connect feed from the dwelling to the labeled inlet Pipe. Connect the overflow pipe to the relevant soak away/water course/sewer sewer. There is a socket on the tank to accept Ø110mm pipework to run your diffuser and sludge return pipework from the blower housing. There is also a vent socket on the tank for the end user wash to fit an appropriate vent stack.

**Step 6 (Finalisation)**

Continue to backfill the tank up to ground level. The unit has an adjustable riser on to aid it reaching ground level. NB. Pedestrian duty man hole cover supplied as standard, this is not suitable for traffic loading. If installing in a traffic area a suitable rated cover/frame should be installed. This should be recessed into a suitably designed structural slab to distribute the load away from the tank.

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**017909-01 - BioCient® Sewage Treatment Tank**

**INSTALLATION PROCEDURE**

8.1 Please see installation drawing provided.

**8.2 DRY GROUND CONDITIONS**

8.2.1 Excavate the site allowing for a minimum clearance on all sides and base of the unit of 150-200mm and level the base. If leveling pegs are used they should only be placed at the corners of the hole, well away from the tank.

8.2.2 Ensure that the hole is kept dry. Should any rain or surface water collect in the hole, this should be pumped out.

8.2.3 A base of at least 150-200mm of lean mix concrete should be provided.

8.2.4 Level the tank into the hole using a rope sling through the lifting points provided on the tank. Under no circumstances should the sling be attached to the inlet pipe or outlet pipe.

8.2.5 Position the inlet pipe in line with the incoming drain. Note that the inlet and outlet pipes are clearly marked on the tank. The unique profile of the base will help to level the tank, but make sure the tank is in the truly upright position in order to maintain the 100mm head difference between the inlet and outlet pipes.

8.2.6 Use webbing slings of suitable specification through both of the designated lifting holding down points, fitted either side of the tank body to secure tank in place.

8.2.7 After any concrete in the base has taken up its initial set (usually after one day), ballast the tank by putting approximately 0.5m depth of water into it.

8.2.8 Backfill the space around the tank with pea gravel or similar material (3-6mm). The backfill should be free from organic material, large stones, bricks or sharp objects.

8.2.9 Backfilling should be carried out in layers making sure that voids are not left under and around the sides of the tank and that there are no localised stress concentrations. It is most important that the installer progressively fills the tank with water to the level above the backfill in order to stabilise pressures on the tank.

8.2.10 Remove any temporary covers, and connect up the tank inlet and outlet pipe to your own pipework. Do not use reducers.

8.2.11 Backfilling can now proceed up to ground level.

8.2.12 Venting can be provided through a dedicated 110mm vent socket arrangement on the tank, additional venting can be provided via the inlet & outlet vertical pipe connections, if not used please blank off with socket and blanking cap.

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# SEWAGE TREATMENT SYSTEMS

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**8.3 WET GROUND CONDITIONS OR BADLY DRAINED GROUND**

8.3.1 The installation procedure for wet ground conditions is similar to that for dry ground conditions, though the following additional points must be considered:

8.3.2 A lean mix concrete base of minimum depth 200mm should be provided. In wet ground conditions the installer should ensure that the base is adequate to support the weight of the tank and its contents. If the base of the excavation is unstable (i.e. running sand or slurry) excavate an additional 250-300mm below the concrete levels and fill up with compacted hardcore. Place a sheet of polythene over the hard core and up the sides of the excavation before putting in the concrete grade.

8.3.3 Ensure that the water is pumped from the excavation during installation and that during backfilling the water is conveyed away from the hole.

8.3.4 Backfilling material should be lean mix concrete.

8.3.5 Ensure that the concrete is not too wet and that it is tamped in around the tank. Do not use a vibrating poker.

8.3.6 Only back fill with concrete up to the top of the body spheres. Do not surround the pipework with concrete.

8.3.7 It is most important that the installer progressively fills the tank with water to a level above the backfill in order to stabilise pressure on the tank.

**8 INSTRUCTIONS FOR CONNECTION OF EXTENSION NECK**

9.1 Please see attached Extension neck fitting instructions drawing DS1213 provided.

9.2 When extension neck is used, tank must be encased in concrete (for details see Wet Ground Conditions Section).

**9 VENTING**

9.1 A vent socket has been provided in the tank body so as to provide air for tower operation. A high level vent should be provided at the property, connected to the drain line. The head of the drainage system should be connected to a stack pipe, open at high level, so as to draw foul air from the system and be sited with consideration to prevailing wind direction.

9.2 The vents & Air admittance valves should not be used as the sole drainage ventilation facility, but if these cannot be avoided, the unit should be independently ventilated. All inspection points within the drain system should be sealed so as to enable ventilation at high level. If the unit is installed at a great distance from the property, a local vent may be required. The drainage field should be vented. (See BS 6297 2007)

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**017909-01 – BioCient® Sewage Treatment Tank**

**10 ELECTRICAL INSTALLATION**

10.1 It is imperative that the electrical installation of this equipment is entrusted to a competent qualified electrician working to the latest R.E.E. regulations.

10.2 It is not possible to state a specific installation configuration that would suit all sites. The selection of current protection devices must remain the responsibility of the installer who should select a suitable cable and current overload protection, taking into account the distance from the power source to the unit and any other relevant factors. (In many cases steel wire armoured (SWA) cable, minimum 1.5 sq. mm will be suitable)

10.3 When installing the electrical supply to the unit, the following points should be considered:

10.4 The electric power supply to the tank should be by means of a dedicated circuit with isolation and protection devices consistent with the requirements for fixed equipment and in accordance with the latest regulations of the Institute of Electrical Engineers.

10.5 This power supply should be independent of all other household protection devices other than the supply authority's main fuse and that provided specifically for the power supply. In particular, earth leakage devices provided for normal domestic protection must not form part of the supply circuit to the tank.

10.6 An earth leakage circuit breaker should be incorporated in the supply to the unit. A device with 30mA minimum trip current is recommended.

10.7 Locate the Control Panel (017158) and mount externally at a point where it is easily visible from the property.

10.8 The power supply cable should connect to the IP65 rated control panel mounted externally (see sales drawing DS1255P); the supply from the control panel should then pass through a duct into the Blower Housing (located outside the plant) and terminate in the junction box fitted inside the blower housing. Any terminal shrouds removed during the connection of cable cores must be replaced afterwards. A separate duct or conduit should be provided by others. The connection from the junction box to the solenoid valve will be made by the factory.

The solenoid timer will be pre-set:

**BioCient® 1 (10PE) - 60 Secs ON / 60 mins OFF.**  
**BioCient® 2 (10PE) - 90 Secs ON / 60 mins OFF.**

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**017909-01 – BioCient® Sewage Treatment Tank**

**11 THE PROCESS**

12.1 The unit is a new generation of package sewage treatment plant developed to treat domestic and other biodegradable sewage waste in a simple and compact system comprising three treatment zones within a 'unit-tank' design.

12.2 The moving aerated media process used is a compact development of the traditional biological process and provides a more effective and complete means of reducing the loads.

12.3 Raw sewage gravitates to the unit where it is received in the primary settlement zone. Here, gross solids and other coarse debris settle to the bottom of the tank where they remain until the tank requires desludging. Settled sewage is displaced from primary zone and enters the aerated media reactor.

12.4 Media and liquid circulation in the reactor is achieved through the use of a compressor and diffuser, which introduces fresh air into each compartment. The liquor is constantly re-circulated and contacts the moving media and as it does so, it is purified by the microorganisms (biomass) growing on the surface of the media and within the moving liquor. Excess growth of biomass is shed as solid particles into the liquor.

12.5 When settled sewage enters the primary tank it displaces an equal volume of treated liquor from the second reactor chamber into the humus or final section.

12.6 The final settlement tank is where humus solids settle to form sludge. At preset intervals, portions of the sludge and liquor are returned to the primary tank for additional treatment. However, sludge does build up and it must be periodically removed. The primary and final settlement zones should be emptied of sludge every 12 months.

12.7 Final effluent is displaced from the final settlement tank. With regulator approval, it is suitable for discharge to a septic/soak or drainage field.

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**017909-01 – BioCient® Sewage Treatment Tank**

**12 PLANT START UP/SHUT DOWN PROCEDURE**

**START UP**

12.1.1 Every care is taken to ensure that all mechanical components are correctly fitted, adjusted and lubricated prior to leaving the factory. However, subsequent handling during transportation and installation may result in the movement of components and a subsequent need to re-adjust prior to starting the unit. Your installing contractor should have thoroughly checked the unit.

12.1.2 If, on inspection, you consider that any components require adjustment, please contact us. We do strongly recommend that you purchase a Pre-Service Agreement Inspection from an approved engineer experienced in the operation of sewage systems. Your warranty may require it.

12.1.3 If you are considering starting up the unit yourselves, the following guidance is provided, however, you should not attempt to carry out to do this if there is any doubt about the installation. Ensure that all Health and Safety precautions are observed. All electrical work should be carried out by a competent qualified electrician.

**Water**

12.1.4 During installation the unit should have been left filled with water, check that the unit is full of water to the outlet level.

**Electrical**

12.1.5 Check that the power supply is connected. Check that all electrical components and conductors are earthed.

12.1.6 Check the operation of the RCD (supplied by others) in accordance with the manufacturer's instructions.

12.1.7 Check the running current of the compressor against the full load current rating.

**Unit**

12.1.8 Check that the unit is in order, with no obvious damage or misalignment of parts. If any problems are discovered, contact us.

12.1.9 Check that the recycle operates returning liquid from the final settlement zone to the primary settlement zone.

12.1.10 Check that the reactor compartments "bubble" and that the media moves.

12.1.11 Check that water flows freely into and out of the plant.

12.1.12 Fit the manhole cover and lock in position.

12.1.13 If any equipment appears not to be operating correctly, refer to Fault Finding section of this manual.

12.1.14 The unit is now operational, however, the treatment process is dependent on the growth of naturally occurring microorganisms on the filter media. The time taken for these to fully establish is dependent on temperature and may take from six to eight weeks in winter (less in summer). Please note that the treatment process will be incomplete until the biomass is fully developed. During this time, do not allow any strong cleaning agents or bleaches to enter the system. Some ammonia treating bacteria will not develop in the colder months when the temperature is low (below 12°C).

**SHUT DOWN - NO INCOMING FLOW**

12.1.15 Temporary absence of flow to the plant will not be detrimental, however, if the flow of sewage to the plant is interrupted for long periods, (several months), the following procedure should be completed.

12.1.16 Desludge all tank compartments in accordance with the instruction in the maintenance section of the manual.

12.1.17 Refill the plant with clean water.

12.1.18 Re-Fit all tank covers, checking that the lid fixings are secure and in place.

12.1.19 Isolate the compressor.

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Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)  
 The information included in this report details the site suitability for a waste water treatment tank and percolation system for single houses less than or equal to 10PE. This report has been completed in accordance with the EPA CoP 2021.



# SEWAGE TREATMENT SYSTEMS

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**13. OPERATION**

13.1 Introduction

13.1.1 The biological treatment process of your BioPura is self regulating and it requires no specialised operational knowledge, but it is important that you are aware of the following:

13.1.2 Your system uses colonies of live natural micro-organisms (biomass), to break down the pollutants in the sewage. Many chemicals used in households and commercial establishments can inhibit or kill these micro-organisms; particularly if used in excessive amounts.

13.1.3 Bear in mind that treatment plants serving small populations do not have the benefit of dilution that occurs at a large sewage works. A bottle of bleach tipped down a toilet in Birmingham would be virtually lost amongst the millions of gallons of sewage arriving at the city's treatment works; a bottle of bleach in a plant serving just one house can be a lethal dose for the biomass.

13.1.4 If the biomass is damaged, it will usually recover in time, but one of the more obvious symptoms of damage can be an unpleasant smell, so it is in the operator's interest to avoid this.

13.1.5 Generally speaking all common household cleaning fluids are acceptable, provided they are used in accordance with the maker's instructions and stipulated concentrations. The following 'Do's and Don'ts' includes the most common household chemicals, but it is not an exhaustive list and the golden rule is: "If in doubt - leave it out."

13.1.6 Bear in mind too that it isn't only the toilet that is connected to the treatment plant; anything that goes down the sink, bath etc. also ends up there.

**13.2 Do's and Don'ts**

13.2.1 **Washing machine and dishwasher detergents, washing up liquids:** These are generally all right to use in the normal concentrations and usage found in domestic housing applications. But problems can occur. For instance, you are washing the jersey of the local rugby club's five years! If you have to do unusual amounts of clothes washing it would be a good idea to spread it over a few days.

13.2.2 **Excessive use of Biological washing powders:** These are safe to use in accordance with the makers recommendations and at the minimum necessary concentration. Do not pour neat disinfectants or bleach down sinks or outside gullies. (If these are smelly it usually indicates a build up of decaying material or a plumbing problem and should be dealt with accordingly.)

13.2.3 **Floor cleaners, disinfectants and bleaches:** These are safe to use in accordance with the makers recommendations and at the minimum necessary concentration. Do not pour neat disinfectants or bleach down sinks or outside gullies. (If these are smelly it usually indicates a build up of decaying material or a plumbing problem and should be dealt with accordingly.)

13.2.4 **Nappy disinfectants and bottle sterilising fluids:** e.g. Milton. When disposing of the used fluid, ensure that it is well diluted with water, for example by flushing it away down the toilet.

13.2.5 **Waste disposal units:** These do not inhibit the biomass, but, depending on use, they can present the treatment plant with considerable extra load both in terms of organic load and liquid as the grinded product is flushed into the unit. The use of a maceator will probably result in the treatment process becoming unbalanced, leading to problems. We have not allowed for their use in the system design.

13.2.6 **Home beer and wine making:** These present a similar problem to waste disposal units. The unit has to work as hard to treat one pint of beer tipped down the drain as it does to treat all the normal waste produced by one person in 24 hours. The chemicals used to cleanse and sterilise can affect biomass. See also the notes above regarding sterilising fluids.

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017909-01 - BioCiser® Sewage Treatment Tank

**13.2.7 THE FOLLOWING MUST NOT BE DISCHARGED INTO THE DRAINS**

- Motor oil, grease, anti-freeze, brake fluid etc.
- Cooking oil and fat
- Weed killers, insecticides, fungicides and other gardening chemicals.
- Paint, thinners, white spirit, turpentine, creosote etc.
- Chemical drain cleaners/ Commercial cleaning products.
- Acid based brick-stone floor cleaners.
- Medicines (Return unused medicines to a pharmacist for safe disposal)
- Photographic developing fluids.
- Nappies, sanitary towels, rags, soft toys, tennis balls etc. Although such items are not directly damaging to the biomass they can cause problems, not the least of which is simple blockage of the drains. Disposable nappies and sanitary towels and toilet wipes although termed biodegradable, they do not degrade fully within the treatment plant and they can lead to malfunction.

**15. MAINTENANCE**

Every sewage treatment plant needs regular maintenance as does the upkeep of drainage fields and drains. This is the responsibility of the owner/user.

We recommend that plants are maintained by qualified service personnel, however some self help and an awareness of normal operation is helpful in identification of a larger problem.

If the plant appears not to be operating correctly, refer to the Fault Finding section of this manual.

**15.1 MAINTENANCE SCHEDULE**

**DAILY**

15.1.1 Check the operation of the compressor. It should be possible to hear it running by standing close to the unit.

**MONTHLY**

15.1.2 Check the operation of the compressors (bubbles should be rising in the reactors and media should be seen slowly rotating).

15.1.3 Visually check that the inlet and outlet zones are clear of debris.

15.1.4 Visually check the biomass growth on the filter media. The biomass colours should vary from light brown colour, (not white or grey) to rich brown. Odour from the plant should be 'earthy' and hydrogen sulphide odours ('rotten eggs') should not be present.

15.1.5 Visually check the final effluent. If cloudy or containing many suspended particles, then the humus and/or primary tank is likely to require desludging.

**THREE MONTHLY**

15.1.6 Assess the depth of the thickness of the floating sludge in the primary and final zones.

15.1.7 Check the blower filter, and replace if necessary. Note: The filter will collect dirt particles from the air and the location of blower/inlet will influence the frequency of filter change.

**ANNUALLY**

15.1.8 The unit is designed to be emptied of sludge every 12 months

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**16. WARRANTY**

16.1 Taken from 'Kingseps's Terms & Conditions of Sale'

16.2 The company will replace or, at its option, properly repair without charge any goods which are found to be defective and which cause failure in normal circumstances of use within a period of twelve months from the date of delivery.

16.3 This warranty is conditional upon:

(a) the Buyer notifying the Company of any claim within seven days of the failure becoming discoverable,

(b) the Company being allowed a reasonable opportunity to inspect the goods so as to confirm that they are defective,

(c) the goods not having been modified, misused or misused and being used strictly in accordance with any relevant instructions issued by the Company.

16.4 The Company's liability under this Clause is limited to the repair or replacement of the defective goods, and does not cover costs of transport, installation or associated site costs, if applicable.

16.5 The Company's liability to replace or repair the goods is in lieu of and excludes all other warranties and conditions, and in particular (but without limitation) the Company shall have no liability of any kind for consequential loss or damage.

16.6 For any further advice, please contact us.

16.7 A Warranty Form is included in this package, to register your unit for Warranty. Please complete ALL sections of the Form, and return it at your earliest convenience.

16.8 Also within this package is a Notice, describing the necessary maintenance of the plant in use. This should be fixed within the building.

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**17. FAULT FINDING**

**1 COMPRESSOR NOT RUNNING**

Cause	Remedy
Power cut	Do nothing. When power is restored the system will restart automatically. Check Mini Circuit Breaker on electrical supply board
Power supply RCD (Residual current Device) tripped	Isolate the power supply and reset the RCD. Switch on the blower, which should start automatically. If not, switch off the power and call an electrician

**2 NO EVIDENCE OF AIR BUBBLES RISING THROUGH THE MEDIA**

Cause	Remedy
Blower not running	Refer to fault condition 1 Contact our Service company (Details on front cover)

**3 MEDIA NOT MOVING**

Cause	Remedy
Blower not running	Refer to fault condition 1 Contact Service company

**4 NO BIOMASS GROWTH ON MEDIA OR WHITE GROWTH THROUGHOUT BOTH BIOLOGICAL REACTORS**

Cause	Remedy
Blower not running	Refer to fault condition 1 Contact service company
Toxic input	Consider each chemical and the amount used within the properties. E.g. washing powders bleach. Switch to alternative products, consider switch from biological powders to non biological washing liquids and use less per wash

**5 SMELL**

Cause	Remedy
Blower not running	Refer to fault condition 1 Contact service company
Time for a Desludge	Remove sludge from primary and final compartments

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017908-01 – Bolicent® Sewage Treatment Tank

**17. FAULT FINDING**

**1 COMPRESSOR NOT RUNNING**

Cause	Remedy
Power out	Do nothing. When power is restored the system will restart automatically. Check Mini Circuit Breaker on electrical supply board
Power supply RCD (Residual current Device) tripped	Isolate the power supply and reset the RCD. Switch on the blower, which should start automatically. If not, switch off the power and call an electrician

**2 NO EVIDENCE OF AIR BUBBLES RISING THROUGH THE MEDIA**

Cause	Remedy
Blower not running	Refer to fault condition 1 Contact our Service company (Details on front cover)

**3 MEDIA NOT MOVING**

Cause	Remedy
Blower not running	Refer to fault condition 1 Contact Service company

**4 NO BIOMASS GROWTH ON MEDIA OR WHITE GROWTH THROUGHOUT BOTH BIOLOGICAL REACTORS**

Cause	Remedy
Blower not running	Refer to fault condition 1 Contact service company
Toxic input	Consider each chemical and the amount used within the properties. E.g. washing powders bleaches. Switch to alternative products. Consider switch from biological powders to non biological washing liquids and use less per wash

**5 SMELL**

Cause	Remedy
Blower not running	Refer to fault condition 1 Contact service company
Time for a Desludge	Remove sludge from primary and final compartments

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## SEWAGE TREATMENT SYSTEMS

Klargester - Tricel - WPL - CLF - Harlequin - Conder - Kee Services



### Installation Accreditation



### Site assessor Accreditation



Contact : Mob 086 050 5454 Email : [info@siteassessment.ie](mailto:info@siteassessment.ie) Website : [www.siteassessment.ie](http://www.siteassessment.ie)

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## iSure Tradesman Ireland

### Important Notice

Please read the following information carefully as it is a record of the information given by you and/or on your behalf. This information has been used to decide the premium to charge you and the terms on which to provide cover to you. If the information is correct, to the best of your knowledge and belief, you need take no further action. However if any of the following details appear to be incomplete or incorrect, please contact us as soon as practically possible. You will be advised of any changes to your policy, or to the premium payable and will be issued with a replacement Statement of Fact. Providing the information, contained in this document is accurate and correct, you should retain this document and keep it in a safe place.

**This SoF was issued on:**  
21/03/2025

**Policy Number:**  
TRI006475

**Broker Details:**  
Campion Insurance - Dublin

You have confirmed that all principles, partners or directors in the business have not:

- Been declined insurance, had an insurance terminated, been refused a renewal or had special terms imposed (increased excess, restriction in cover).
- Been charged with (but not yet tried) or convicted of a criminal offence (other than motor offences).
- Had any prosecutions or received notice of an intended prosecutions under Safety Legislation.
- Had any Court Judgments against them.
- Been declared bankrupt or insolvent.

You have confirmed that the following statements are also true & will remain for the duration of the Period of Insurance:

- You only work in Republic of Ireland and Great Britain, Northern Ireland, the Channel Islands or the Isle of Man
- The business meets all statutory obligations including Fire Safety, Electrical Inspections and Health and Safety regulations relevant to the business
- The business does not undertake any work in aircraft operational areas, chemical works, gas works, nuclear installations, offshore installations, petrochemical works, power stations or railway infrastructure
- All persons working with children are Garda vetted at least once per annum
- You do not have a waste transfer or waste carriers licence
- The proposer has at least 3 years' experience in the trade
- The business does not do any excavation work over 3 metres in depth
- The business does not undertake any demolition work
- The business does not undertake any work and has never previously undertaken any work involving asbestos or asbestos containing materials
- There are no current or potential matters that may give rise to a legal or contractual dispute
- All employees entering or working on any construction site must have a valid Safe Pass Registration Card
- The proposer is domiciled in the Republic of Ireland

### Proposer Details

<b>The Insured:</b>	Drainpower Environmental Services Ltd
<b>Correspondence Address:</b>	Pallasmore Portroe Nenagh Tipperary
<b>Country Domiciled:</b>	Republic of Ireland

## Trade &amp; Business

<b>Primary Trade (must cover at least 50% of all business activities):</b>	Surveyors & Loss Adjusters
<b>Secondary Trade (if applicable):</b>	N/A
<b>Third Trade (if applicable):</b>	N/A
<b>Annual turnover:</b>	€250,001
<b>Turnover to BFSC:</b>	€30,000
<b>Business Type:</b>	Limited Company
<b>How many years has the business been trading:</b>	5 or more
<b>Number of Manual Directors:</b>	1
<b>Number of Clerical Directors:</b>	0
<b>Number of Manual Employees:</b>	0
<b>Number Clerical Employees:</b>	0
<b>Max Wageroll of Temporary employees / labour only sub contractors:</b>	Not Insured
<b>Do your business activities involve the application of heat:</b>	No
<b>Percentage of work involving the use of heat:</b>	None

## Cover Details

Description	Limit of Indemnity
<b>Public/Products Liability:</b>	€13,000.000
<b>Professional Indemnity:</b>	€5,000.000

## Tools &amp; Business Equipment

Description	Sum Insured
<b>Tools and Business Equipment:</b>	Not Insured

## Contract Works, Own and Hired in Plant

Description	Sum Insured
<b>Contract Works:</b>	Not Insured
<b>Own Plant:</b>	Not Insured
<b>Hired in Plant:</b>	Not Insured

## All Risks Machinery

All Risk Equipment	Item Description	Cover Required Area	Sum Insured

## Legal Expenses

**Legal Expenses Cover Required:** INSURED

**Are you aware of any current or potential matters that will give rise to any legal or contractual disputes?** No

## Claims & Complaints

List all losses/claims or incidents that may give rise to a claim during the last 5 years, which relates to the proposed insurance

Date of Claim	Claim Description	Value of Claim
No Claims		

## Fair Processing Notice

In your dealings with us, you may provide information that includes data that is known as personal data. The personal data we collect may include data such as your name, address, and wider contact details and, depending on the nature of your policy, data relating to health.

We will process your personal data to allow us to provide you with our services as your insurance provider in quoting for, arranging and administering your insurances and in arranging insurance premium finance where applicable.

It will also be used to manage future communications between ourselves, communicate about our products and services and in certain circumstances, to market our services. You can opt out from receiving such communications by emailing [data.protection@isureunderwriting.ie](mailto:data.protection@isureunderwriting.ie).

We will only use your data for the purpose for which it was collected. We will only grant access to or share your data within our firm and firms associated with us and with our market service providers, such as insurers and premium finance providers, where we are required or entitled to do so by law as part of our lawful data processing.

Insurers pass information to Insurance Link, an anti-fraud database containing details of claims made by individuals. The aim is to help insurers to check the information provided and also to prevent fraudulent claims.

If you require further information on how we process your data and our lawful bases for doing so, please contact our data protection representative by emailing [data.protection@isureunderwriting.ie](mailto:data.protection@isureunderwriting.ie) or visit our online Privacy Policy at <https://www.isureunderwriting.ie/privacypolicy>. A paper copy of our Privacy Policy can be provided upon request.

## Declaration

I/We Confirm:

- if any data has been supplied by any other person, he/she shall be my agent for that purpose. I also confirm that any data which I/we have supplied in this Statement of Facts about other persons is given with their knowledge and authorisation
- to the best of my/our knowledge and belief the information given in this Statement of Facts is correct and complete in every detail
- that the information provided is correct. I/we understand our legal obligation to take reasonable care not to make a misrepresentation with regard to the information and if there are any changes to information provided I/we will inform you immediately. I/we understand that failure to amend information previously given may in legal terms amount to a misrepresentation. If a misrepresentation is made the insurer certain legal rights which may include avoidance of the contract of insurance and refusal of all claims. As a result you may also find it difficult to arrange this type of insurance in the future. You are also required to update us with any future changes to your information immediately to ensure the continuity of cover under your policy.
- my/our agreement that this statement of facts, declaration and the additional information provided by me/us and my/our insurance intermediary will form the basis of the contract between me/us and the insurance company
- that we have seen or have been given the opportunity to see a copy of the full policy wording and agree to accept and conform to the terms, conditions and exceptions of the policy and to pay the premiums due
- understanding that my/our personal details will be passed to or used by member companies of the insurers and to third parties such as claims administrators, loss adjusters or fraud investigators for the purpose of my/our insurance (for example underwriting processing and claims handling)
- my/our consent to the information given in this form and any information you may obtain from Fraud prevention agencies of information received with any subsequent claim I/we may make being used in the manner set out under "Fair Processing Notice and our Privacy Policy" above.