20201366

SITE CHARACTERISATION FORM

File Reference:

1.0 GENERAL DETAILS (From planning application)

Prefix: Mr. First Name: John Surname: Roche

Address:

Site Location and Townland: Clonmines, Wellingtonbridge

Telephone No: 086 173 7873 Fax No:

E-Mail:

Maximum no. of Residents: 0 No. of Double Bedrooms: 0 No. of Single Bedrooms: 0

Proposed Water Supply: Mains ✓ Private Well/Borehole Group Well/Borehole

2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type): TILL

Aquifer Category: Regionally Important Locally Important Poor PI

Vulnerability: Extreme High ✓ Moderate Low High to Low Unknown

Bedrock Type: Cambrian Metasediments

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

Groundwater Protection Scheme (Y/N): No Source Protection Area: SI SO

Groundwater Protection Response: R1

Presence of Significant Sites (Archaeological, Natural & Historical): None

Past experience in the area: Varies

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 site would not have obvious environmental restrictions which would generally make it suitable for an on-site waste water treatment system. The aquifer at risk would be Pl aquifer. Subsoil of 1.2 meters below the invert for a conventional system is required. The proposed development will be connected to mains water supply.

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: Sloping towards Bay

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

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

Houses: Two to the North

Existing Land Use: Part Agricultural & Part Camper Parking

Vegetation Indicators: Grass

Groundwater Flow Direction: Southerly

Ground Condition: Firm

Site Boundaries: Open Site Roads: None

Outcrops (Bedrock And/Or Subsoil): None

Surface Water Ponding: None Lakes: None

Beaches/Shellfish: Adjoining Bannow Bay Areas/Wetlands: none

Karst Features: None Watercourse/Stream*: none

Drainage Ditches*: None Springs / Wells*: None

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).

No visible site restrictions. All minimum distances satisfied. Main target in this instance is the Pl aquifer.

*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): 2.20

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: 28/10/2020 11:00 Date and time of examination: 04/11/2020 10:00

	Depth of P/T Test*	Soil/Subsoil Texture & Classification**	Plasticity and dilatancy***	Soil Structure	Density/ Compactness	Colour****	Preferential flowpaths
0.1 m		Clay	3 Threads Ribbon 60mm	Crumb	Low	Brown	Roots
0.2 m							
0.3 m							
0.4 m	P						
0.5 m							
0.6 m		Clay / Silt	6 Threads Ribbons 100mm	Granular	Medium	Light Brown	None
0.7 m							
0.8 m	T						
0.9 m							
1.0 m		Silt / Gravel(Mix) Small Stone	2 Threads Ribbons 50mm	Granular	High	Grey	None
1.1 m							
1.2 m							
1.3 m							
1.4 m							
1.5 m							
1.6 m							
1.7 m							
1.8 m							
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							

Evaluation:

Permeable subsoil

Likely T value: 15.00

Note: *Depth of percolation test holes should be indicated on log above. (Enter P or T at depts 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.

3.3(a) Percolation ("T") Test for Deep Subsoils and/or Water Table

Step 1: Test Hole Preparation

Percolation Test Hole	1	2	3
Depth from ground surface to top of hole (mm) (A)	400	400	400
Depth from ground surface to base of hole (mm) (B)	800	800	800
Depth of hole (mm) [B - A]	400	400	400
Dimensions of hole [length x breadth (mm)]	350 x 350	350 x 350	350 x 350

Step 2: Pre-Soaking Test Holes

Date and Time pre-soaking started	03/11/2020	10:00	03/11/2020	10:00	03/11/2020	10:00

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

Step 3: Measuring T_{100}

Percolation Test Hole No.	1	2	3
Date of test	04/11/2020	04/11/2020	04/11/2020
Time filled to 400 mm	10:05	10:07	10:09
Time water level at 300 mm	10:28	10:45	10:35
Time to drop 100 mm (T_{100})	23.00	38.00	26.00
Average T_{100}			29.00

If T_{100} > 300 minutes then T-value >90 – 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)	Δt (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δt (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δt (min)
1	10:28	10:55	27.00	10:45	11:28	43.00	10:35	11:08	33.00
2	10:55	11:28	33.00	11:28	12:20	52.00	11:08	11:52	44.00
3	11:28	12:10	42.00	12:20	13:23	63.00	11:52	12:49	57.00
Average Δt Value			34.00			52.67			44.67
	Average Δt/4 = [Hole No.1]		8.50 (t_1)	Average Δt/4 = [Hole No.2]		13.17 (t_2)	Average Δt/4 = [Hole No.3]		11.17 (t_3)

Result of Test: T = 10.94 (min/25 mm)

Comments:

T VALUE = 10.94

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

Percolation Test Hole No.	1				2				3			
Fall of water in hole (mm)	Time Factor = T_f	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}	Time Factor = T_f	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}	Time Factor = T_f	Time of fall (mins) = T_m	$K_{fs} = T_f / T_m$	T – Value = 4.45 / K_{fs}
300 - 250	8.1				8.1				8.1			
250 - 200	9.7				9.7				9.7			
200 - 150	11.9				11.9				11.9			
150 - 100	14.1				14.1				14.1			
Average T- Value	T- Value Hole 1= (t_1)			0.00	T- Value Hole 1= (t_2)			0.00	T- Value Hole 1= (t_3)			0.00

Result of Test: T = 0.00 (min/25 mm)

Comments:

3.3(b) Percolation ("P") Test for Shallow Soil / Subsoils and/or Water Table

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	400.00	400
Depth of hole (mm)	400	400	400
Dimensions of hole [length x breadth (mm)]	350 x 350	350 x 350	350 x 350

Step 2: Pre-Soaking Test Holes

Date and Time pre-soaking started	03/11/2020	10:00	03/11/2020	10:00	03/11/2020	10:00

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

Step 3: Measuring P_{100}

Percolation Test Hole No.	1	2	3
Date of test			
Time filled to 400 mm			
Time water level at 300 mm			
Time to drop 100 mm (P_{100})	0.00	0.00	0.00
Average P_{100}			0.00

If P_{100} > 300 minutes then T-value >90 – site unsuitable for discharge to ground
If $P_{100} \leq 210$ minutes then go to Step 4;
If P_{100} > 210 minutes then go to Step 5;

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.

Not Suitable for Development ☐

Suitable for [1]		**Discharge Route**
1. Septic tank system (septic tank and percolation area)	Yes	Discharge to Ground Water
2. Secondary Treatment System		
a. septic tank and filter system constructed on-site and polishing filter; or	Yes	
b. packaged wastewater treatment system and polishing filter	Yes	

5.0 RECOMMENDATION

Propose to install: Packaged wastewater treatment system and polishing filter

and discharge to: Ground Water

Trench Invert level (m): 600.00

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

A mechanical aeration system will be used to reduce the overall size of the percolation area.
The soil at this site has permeability as the results confirm.
A polishing bed of 1200mm of unsaturated soil below the invert level of the percolation trench is required and is available.
With a T value between 5 and 20 and allow 50 ltrs per person per day for camper parking x 40 persons
So thats 2000 ltrs per day x 0.05sq meter percolation size = 100 sq meter percolation area.

Designed in accordance with the E.P.A. code of practice and attached percolation drawing.

[1] note: more than one option may be suitable for a site and this should be recorded

[2] 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 2.6.2.

6.0 TREATMENT SYSTEM DETAILS

SYSTEM TYPE: Septic Tank System

Tank Capacity (m^3) [ ]

Percolation Area		Mounded Percolation Area	
No. of Trenches		No. of Trenches	
Length of Trenches (m)		Length of Trenches (m)	
Invert Level (m)		Invert Level (m)	

SYSTEM TYPE: Secondary Treatment System

Filter Systems

Media Type	Area (m^2)*	Depth of Filter	Invert Level
Sand/Soil			
Soil	110.00	1,800.00	600.00
Constructed Wetland			
Other			

Package Treatment Systems

Type: Doran Concrete 7500L

Capacity PE: 7.00

Sizing of Primary Compartment: 2.20 m^3

SYSTEM TYPE: Tertiary Treatment System

Polishing Filter: Surface Area (m^2)* [ ]

or **Gravity Fed:**

No. of Trenches [ ]

Length of Trenches (m) [ ]

Invert Level (m) [ ]

Package Treatment System: Capacity (pe) [ ]

Constructed Wetland: Surface Area (m^2)* [ ]

DISCHARGE ROUTE:

Groundwater [✓] Hydraulic Loading Rate * ($l/m^2.d$) 1.08

Surface Water ** [ ] Discharge Rate (m^3/hr) [ ]

TREATMENT STANDARDS:

Treatment System Performance Standard (mg/l)	BOD	SS	NH_3	Total N	Total P
	15.00	19.00	9.30	18.00	4.40

QUALITY ASSURANCE:

Installation & Commissioning	On-going Maintenance

* Hydrolic loading rate is determined by the percolation rate of subsoil

** Water Pollution Act discharge licence required

7.0 SITE ASSESSOR DETAILS

Company: John Roche Architectural Technician

Prefix: Mr. First Name: John Surname: Roche

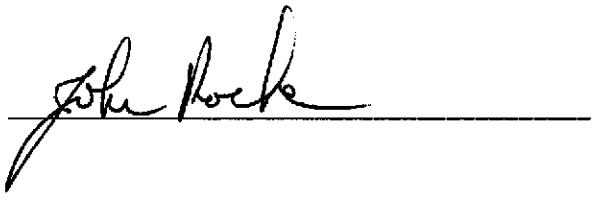
Address: St. Leonards, Ballycullane, New Ross, Co. Wexford

Qualifications/Experience: Dip. Arch. Tech & Site Suitability Assessment Course

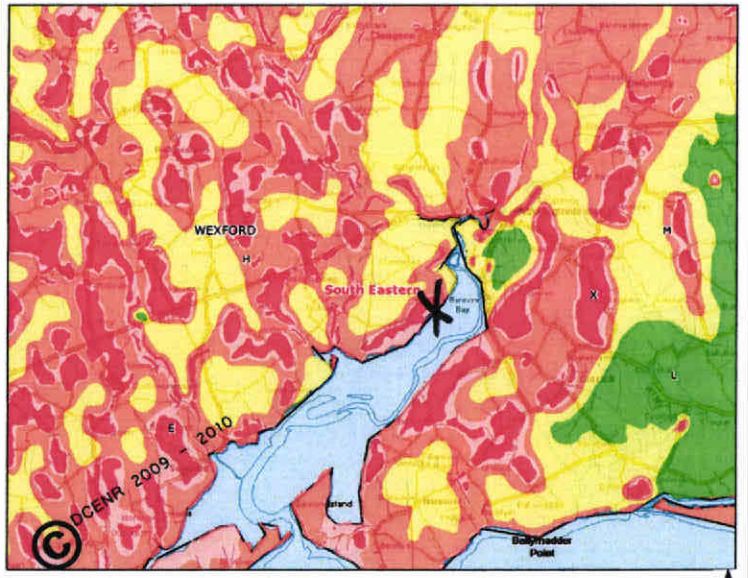
Date of Report: 04/11/2020

Phone: 087-6331420 Fax: 051-562648 e-mail info@jrocheartchservices.com

Indemnity Insurance Number: AP10002691

Signature: 

Vulnerability Map



Legend

Vulnerability

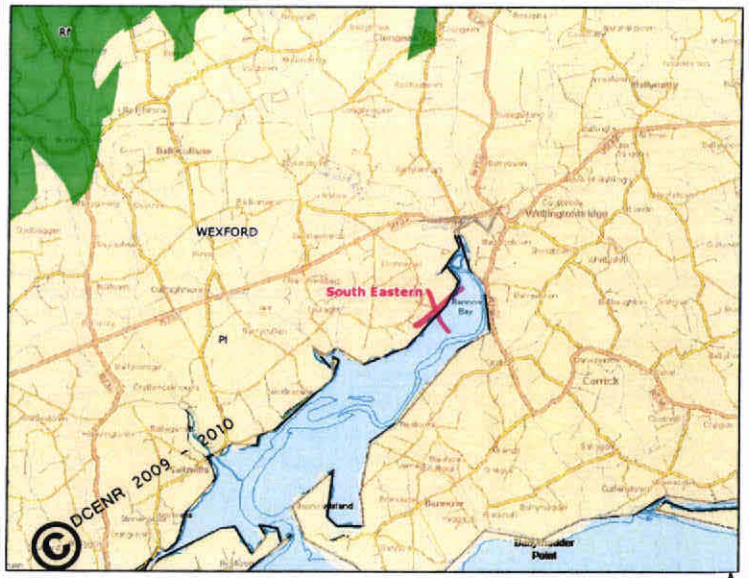
- X (Rock near Surface or Karst)
- E - Extreme
- H - High
- M - Moderate
- L - Low
- Water
- RBD Boundaries
- County Boundaries

Scale: 1:70,934

Map center: 283011, 112081

Snapshot Date: 04-Dec-2014

Aquifer Map



Legend

National Draft Bedrock Aquifer Map

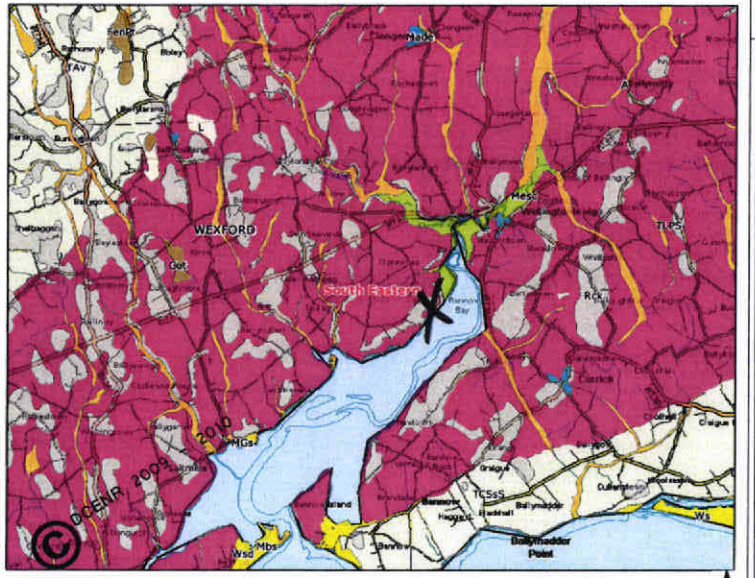
- Rf - Regionally Important Aquifer - Fissured bedrock
- Rk - Regionally Important Aquifer - Karstified
- Rkd - Regionally Important Aquifer - Karstified (diffuse)
- Rkc - Regionally Important Aquifer - Karstified (conduit)
- Lm - Locally Important Aquifer - Bedrock which is Generally Moderately Productive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

Scale: 1:70,934

Map center: 283011, 112081

Snapshot Date: 04-Dec-2014

Subsoil Map



Legend

RBD Subsoils

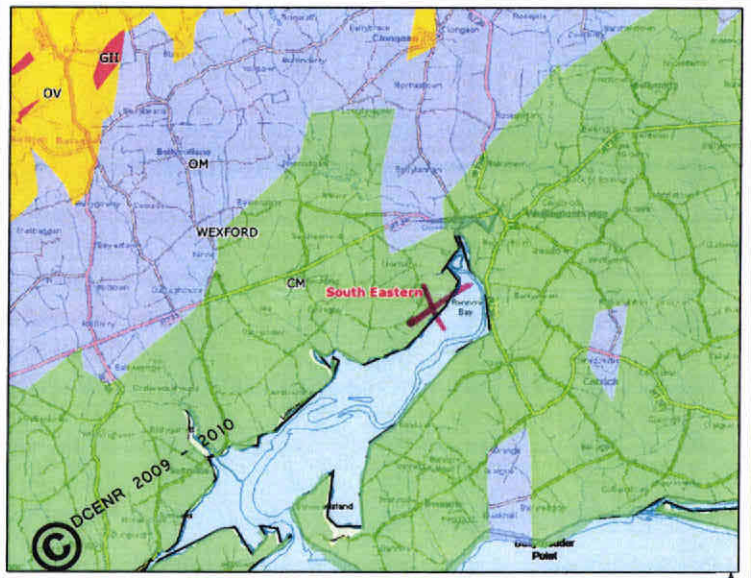
- Alluvium
- Beach sands and gravels
- Bedrock outcrop and subcrop
- Esker sands and gravels
- Glaciofluvial sands and gravels
- Lake sediments
- Made ground
- Marine/estuarine silts and clays
- Marsh
- Peat
- Scree
- Till derived chiefly from Devonian sandstones
- Till derived chiefly from Lower Palaeozoic rocks
- Till derived chiefly from Namurian rocks
- Till derived chiefly from granite
- Till derived chiefly from limestone
- Till derived chiefly from metamorphic rocks
- Till derived from metamorphic rocks
- Till derived from mixed Devonian and Carboniferous rocks
- Water
- Windblown sands
- RBD Boundaries
- County Boundaries

Scale: 1:70,934

Map center: 283011, 112081

Snapshot Date: 04-Dec-2014

Bedrock Map



Legend

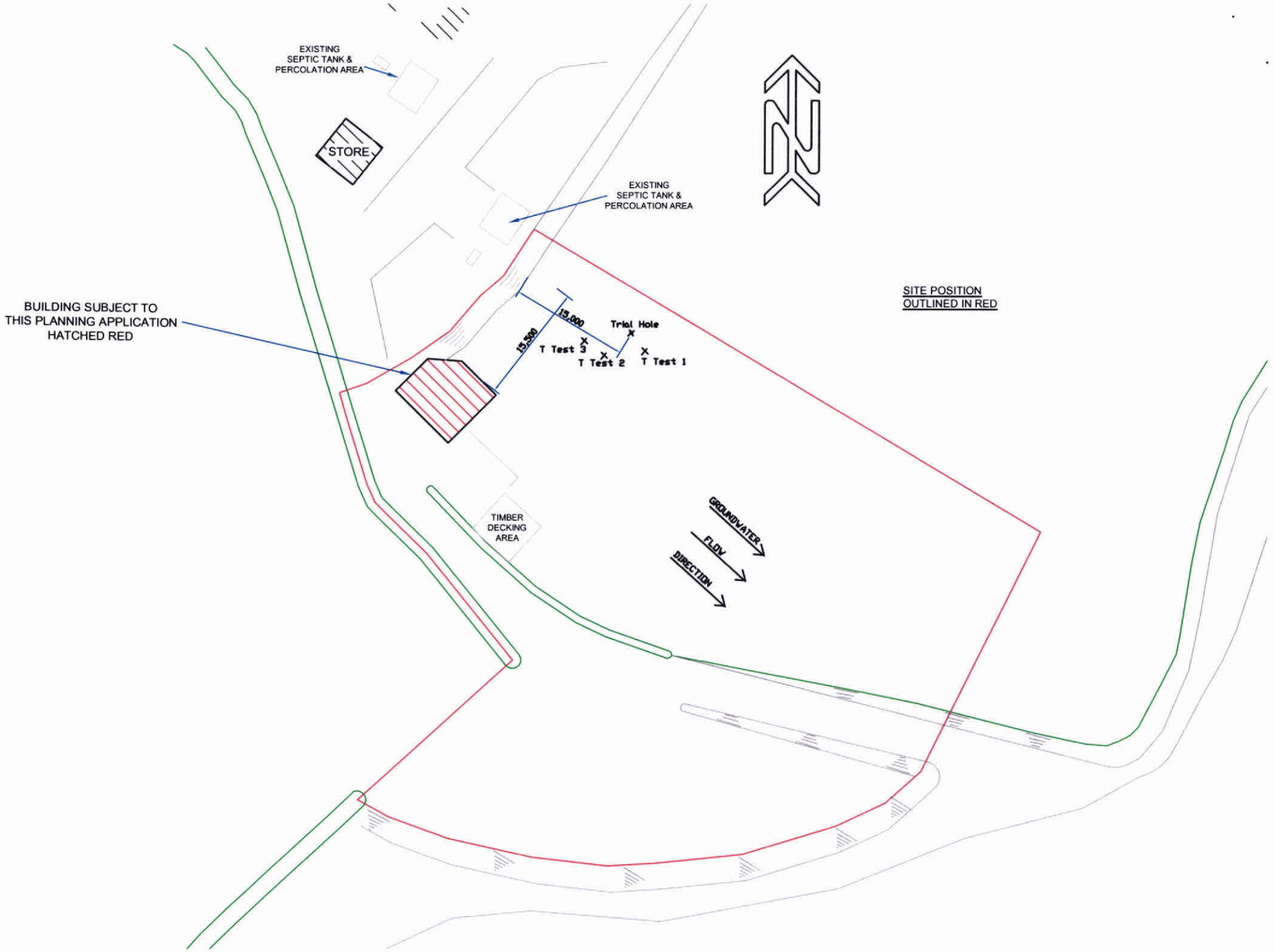
National Draft Generalised Bedrock Map

- BV - Basalts and other Volcanic rocks
- CM - Cambrian Metasediments
- DDL - Dinantian Dolomitised Limestones
- DESSL - Dinantian early Sandstones, Shales and Limestones
- DKS - Devonian Kiltorcan type Sandstones
- DLSL - Dinantian Lower Impure Limestones
- DMSC - Dinantian Mudstones and Sandstones Cork Group
- MSSL - Dinantian Mixed Sandstones, Shales and Limestones
- DORS - Devonian Old Red Sandstones
- DPBL - Dinantian Pure Bedded Limestones
- DPUL - Dinantian Pure Unbedded Limestones
- DS - Dinantian Sandstones
- DSL - Dinantian Shales and Limestones
- DUL - Dinantian Upper Impure Limestones
- GR - Granites and other Igneous Intrusive rocks
- NSA - Namurian Sandstones
- NSH - Namurian Shales
- NU - Namurian Undifferentiated
- OM - Ordovician Metasediments
- OV - Ordovician Volcanics
- PM - Precambrian Marbles
- PQSS - Precambrian Quartzites, Gneisses and Schists
- PTMG - Permo Triassic Mudstones and Gypsum
- PTS - Permo Triassic Sandstones
- SMV - Silurian Metasediments and Volcanics
- WSA - Westphalian Sandstones
- WSH - Westphalian Shales
- RBD Boundaries
- County Boundaries

Scale: 1:70,934

Map center: 283011, 112081

Snapshot Date: 04-Dec-2014


EXISTING
SEPTIC TANK &
PERCOLATION AREA
STORE
EXISTING
SEPTIC TANK &
PERCOLATION AREA
BUILDING SUBJECT TO
THIS PLANNING APPLICATION
HATCHED RED
SITE POSITION
OUTLINED IN RED
15.000
15.500
Trial Hole
T Test 3
T Test 2
T Test 1
TIMBER
DECKING
AREA
GROUNDWATER
FLOW
DIRECTION

PERCOLATION TEST PHOTOS 04/11/2020

LOCATION: Clonmines, Wellingtonbridge

TRIAL HOLE

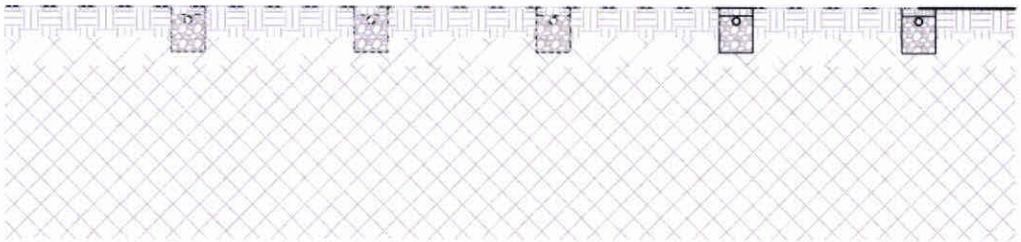
TRIAL HOLE

T TEST 1

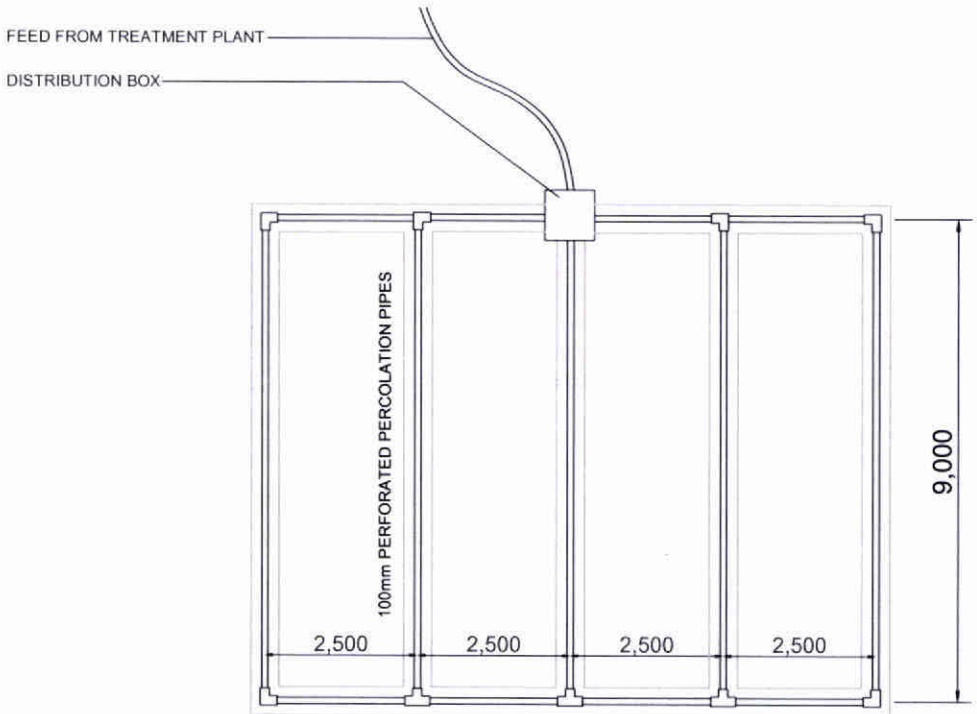
T TEST 2

T TEST 3

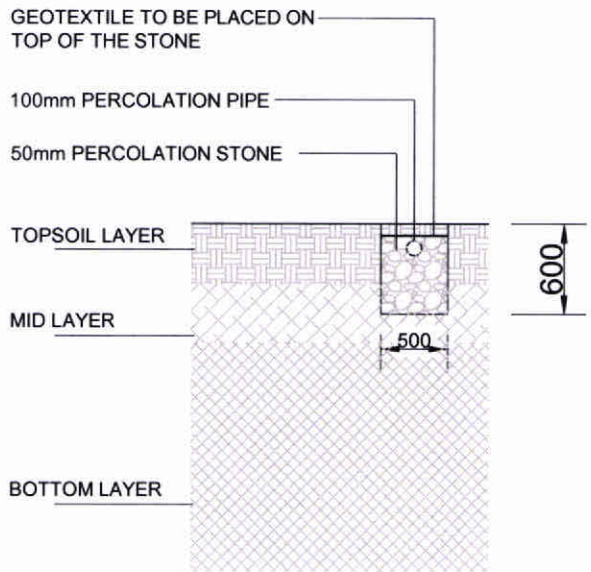
OVERVIEW



CROSS SECTION



PLAN



ENLARGED SECTION

JOHN ROCHE ARCHITECTURAL TECHNICIAN	GENERAL NOTES: This Drawing is for Planning Permission Purposes Only. All Measurments to be Checked before Construction. All Dimensions in Millimetres unless otherwise Specified.	CLIENT: John Roche	SITE AT: CLONMINES WELLINGTONBRIDGE	Date: 04/11/2020 Scale: N/A Drg: Percolations Details	SHEET NO: A	Revision/Issue / Date A B

Doran Concrete Products Ltd.

Newtown Commons
New Ross
Co. Wexford
Ph: 051-422050
Fax: 051-426921
Email: sales@doranconcrete.ie

Mr. John Roche
Architectural Services
St. Leonards
Ballycullane
Co. Wexford

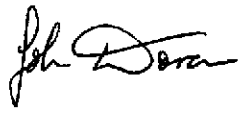
Dear John,
With reference to your site characterisation form for Mr. John Roche at Clonmines, Wellingtonbridge Co. Wexford with a 6 person occupancy. We can supply a EN12566n:Part 3 waste water treatment system complying with the SR66 regulations , for this site. The 7500L waste water treatment system is fully tested for up-to 7 people and the independent results are attached on the following page.

The site characterisation form has listed a T value of 10.94 therefore we would recommend a percolation system incorporating 45 linear meters of piping into 0.5m trenches into a percolation bed. The bedrock is Cambrian Metasediments which has good drainage properties. The bedrock and the water table are below 2.2 meters

Only pre drilled percolation piping is to be used and not yellow land drainage in the percolation area and the percolation area is to be constructed in accordance to the EPA Guidelines for sewage from a domestic dwelling house.

If you have any further inquiries please call us on 051-422050 during office hours.

Yours Sincrerely



TREATMENT PERFORMANCE RESULTS

Doran Concrete Products Ltd.
Newtown Commons, New Ross, Co. Wexford, Ireland

EN 12566-3
Results corresponding to EN 12566-3 and S.R. 66

PIA-SR66-1701-1001

Small wastewater treatment system 7500L
Fluidised bed system with 6 chambers

Nominal organic daily load	0.33 kg/d		
Nominal hydraulic daily load	1.08 m^3/d		
Material	Concrete		
Watertightness	Pass		
Crushing resistance (calculation)	Pass (also wet conditions)		
Durability	Pass		
Treatment efficiency (nominal sequences)		Efficiency	Effluent
	COD	91.3 %	56 mg/l
	BOD_5	94.8 %	15 mg/l
	NH_4-N	77.7 %	9.3 mg/l
	SS	95.1 %	19 mg/l
Number of desludging	Not more than once		
Electrical consumption	3.1 kWh/d		

Performance tested by:

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

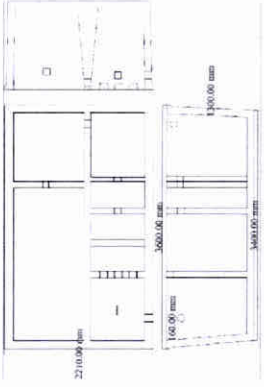
This document replaces neither the declaration of performance nor the CE marking.

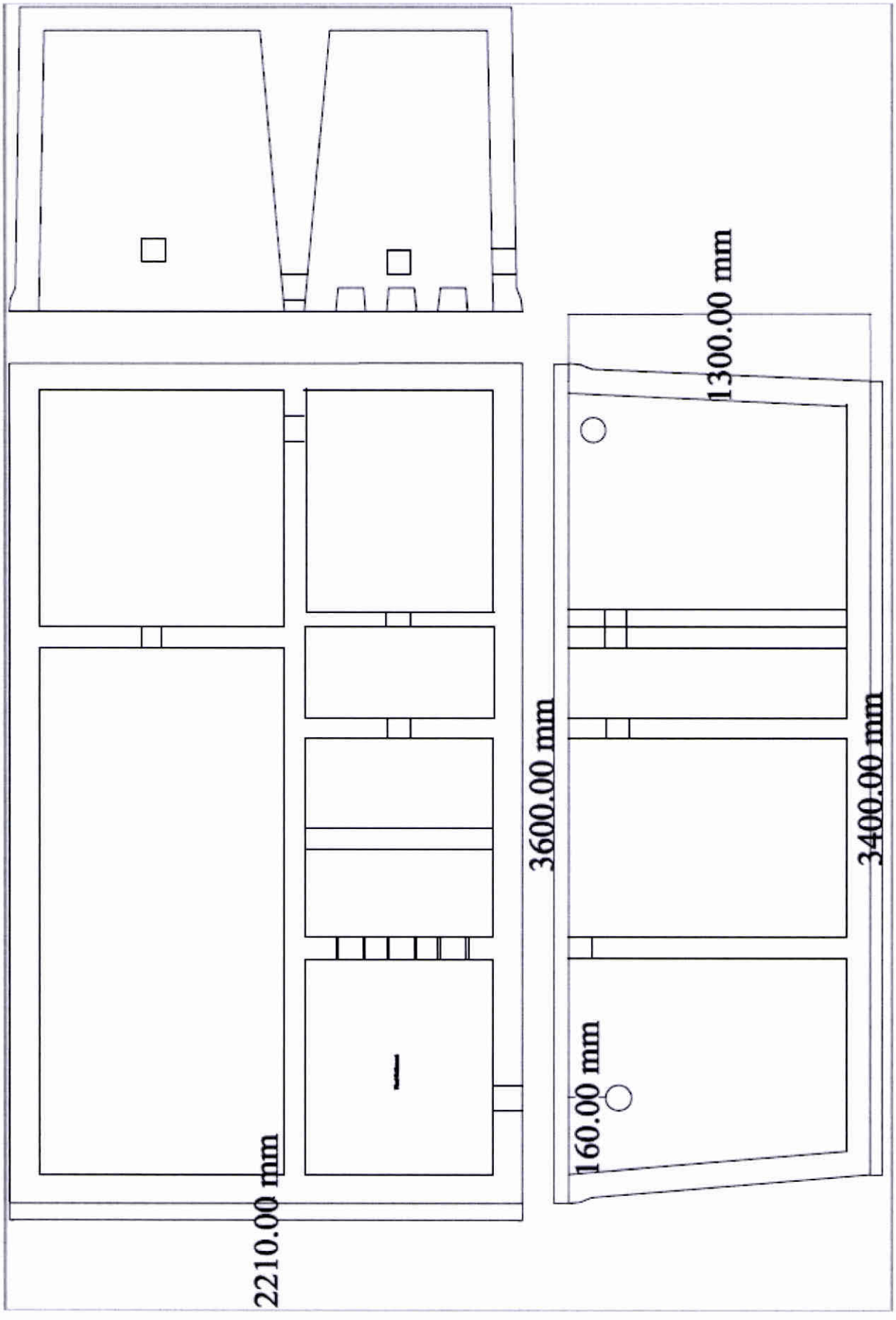
Notified Body No.: 1739

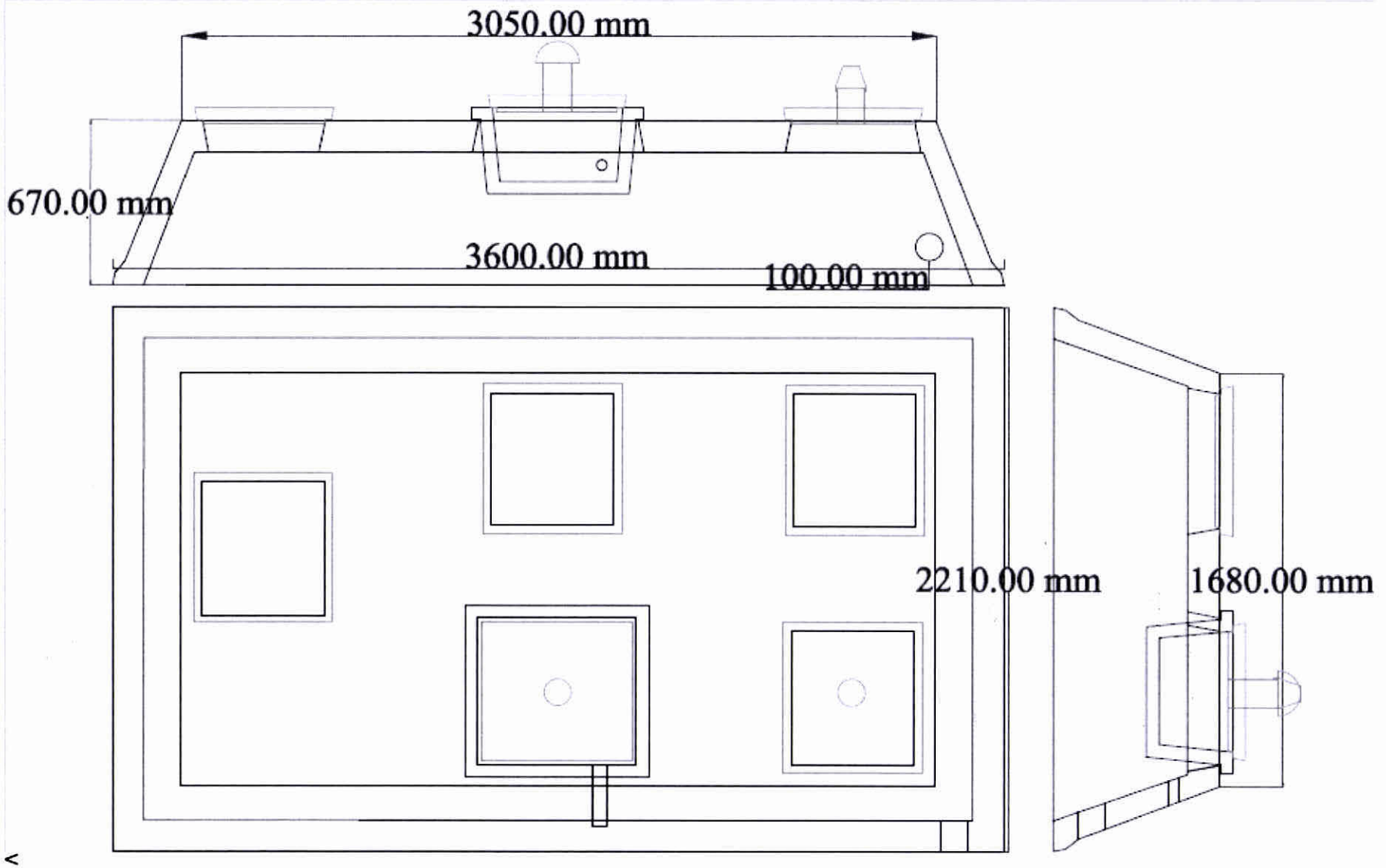
Certified according to ISO 9001:2008

Elmar Lancé January 2017

7500L range and its referring test reports:

Name of the model and/or population equivalent (PE)	Drawing of model of the range	Watertightness (EN 12566-3 Annex A)	Treatment Efficiency (EN 12566-3 Annex B)	Structural Behaviour (EN 12566-3 Annex C)	Durability
Initial Type Test (ITT) 7		Pass PIA2010-126B22	Pass PIA2010-126B22	Pass PIA2011-ST-CAL-1001-1002 For wet ground conditions also, installation depth 1.00 m from inlet invert	Pass PIA2017-DH-1701-1001.01


1300.00 mm
3600.00 mm
3400.00 mm
160.00 mm
2210.00 mm


3050.00 mm
670.00 mm
3600.00 mm
100.00 mm
2210.00 mm
1680.00 mm