PercolationTests.ie

Planning Assessments & Land Surveys

Tel: 087 6636 757 Email: percolationtests@gmail.com Web: www.percolationtests.ie

Site Suitability Assessment.

Prepared on behalf of:

Mr Frank O'Gorman.

At:

O'neills

Tea Room, Cruagh, Rockbrook, County Dublin.

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Scope of Report.

The findings of this report are the result of a desk study and geological field interpretation. Interpretations and conclusions included in the report are based on knowledge of the ground conditions following detailed investigations, as well as the regional soils, subsoils and bedrock geology, and the experience of the author. David Ryan has prepared this report in line with the best current practice and with all reasonable skill, care and diligence in consideration of the limits imposed by the survey techniques used and resources devoted to it by agreement with the client. The interpretive basis of the conclusions contained in this report should be taken into account in any future use of this report.

David Ryan accepts no responsibility for any matters arising if any recommendations contained in this document are not carried out, or are partially carried out, without further advice being obtained from David Ryan.

SITE CHARACTERISATION FORM
COMPLETING THE FORM

Note: This form requires the latest version of Adobe Acrobat Reader

and on PC's Windows 7 or later. Windows XP produces errors in calculations

Step 1:

Goto Menu Item **File, Save As** and save the file under a reference relating to the client or the planning application reference if available.

Clear Form Use the **Clear Form** button to clear all information fields.

Notes:

All calculations in this form are automatic.

Where possible information is presented in the form of drop down selection lists to eliminate potential errors.

Variable elements are recorded by tick boxes. In all cases only one tick box should be activated.

All time record fields must be entered in twenty four hour format as follows: HH:MM

All date formats are DD-MM-YYYY.

All other data fields are in text entry format.

This form can be printed out fully populated for submission with related documents and for your files. It can also be submitted by email.

Section 3.2 In this section use an underline _____ across all six columns to indicate the depth at which changes in classification / characteristics occur.

Section 3.4 Lists supporting documentation required.

Section 4 Select the treatment systems suitable for this site and the discharge route.

Section 5 Indicate the system type that it is proposed to install.

Section 6 Provide details, as required, on the proposed treatment system.

APPENDIX A: SITE CHARACTERISATION FORM

File Reference: Frank O'Gorman - Rockbrook

1.0 GENERAL DETAILS (From planning application)

Prefix: Mr First Name: Frank Surname: O'Gorman

Address:

Site Location and Townland:
Tea Rooms, Cruagh,
Rockbrook, Co. Dublin

Number of Bedrooms: 4 Maximum Number of Residents: 6

Comments on population equivalent

6 Staff: 6ppl x 60l/pp = 360l/pd + 90 Customers: 90ppl x 15l/pd = 1350
Total Loading: 1710l/pd
Population Equivalent: 1710/150 = 11.4 = 12PE

Proposed Water Supply:

Mains ☐ Private Well/Borehole ☑ To be bored on-site Group Well/Borehole ☐

2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type): Podzols (Peaty), Lithosols, Peats

Subsoil, (Specify Type): Till derived from granites

Bedrock Type: Granites & other Igneous Intrusive rocks

Aquifer Category: Regionally Important | Locally Important _____ Poor Pl

Vulnerability: Extreme ☑ High ☐ Moderate ☐ Low ☐

Groundwater Body: Kilcullen Status Good

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

Source Protection Area: ZOC ☐ SI ☐ SO ☐ Groundwater Protection Response: R21

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

Past experience in the area: Not in immediate 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).

Site suitable for septic tank or secondary treatment system based of ground water response rating. Ground water is a potential target at risk. Proposed well on site is also a potential target at risk.

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:	Hillside location		
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:

None within 150m

Existing Land Use:

Field

Vegetation Indicators:

Rushes present in low lying adjacent land

Groundwater Flow Direction: Unknown

Ground Condition:

Firm topsoil underfoot

Site Boundaries:

Site boundaries to be marked by hedgerow and fencing

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment (contd.)

Roads:

Local Road: 45.5m S

Outcrops (Bedrock And/Or Subsoil):

none within 250m

Surface Water Ponding:

none within 250m

Lakes:

none within 250m

Beaches/Shellfish Areas:

none within 250m

Wetlands:

none within 250m

Karst Features:

none within 250m

Watercourses/Streams:*

none within 250m

*Note and record water level

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment (contd.)

Drainage Ditches:*

none within 250m

Springs:*

none within 250m

Wells:*

Proposed well on site, minimum separation of 30m must be maintained from proposed percolation area.

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).

Ground water is a potential target at risk. Proposed well on site is also a potential target at risk.

***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): 2.3

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: 13-Sep-2021

Date and time of examination: 15-Sep-2021

Depth of Surface and Subsurface Percolation Tests	Soil/Subsoil Texture & Classification**	Plasticity and dilatancy***	Soil Structure	Density/ Compactness	Colour****	Preferential flowpaths
0.1 m	Gravelly CLAY	Threads: 4, 4, 4 Ribbons: 120, 115, 115mm. Dilatant: Yes	Crumb	Raspy	Medium Brown	
0.2 m	0.3m	0.3m				
0.3 m		Threads: 2, 3, 3 Ribbons: 105, 105, 105mm. Dilatant: Yes	Crumb	Raspy	Medium Brown	
0.4 m P 123	Gravelly SILT/CLAY	0.7m	0.7m			
0.5 m	0.7m					
0.6 m						
0.7 m						
0.8 m T 123						
0.9 m						
1.0 m						
1.1 m						
1.2 m						
1.3 m						
1.4 m	Gravelly SILT	Threads: 3, 2, 2 Ribbons: 100, 95, 95mm. Dilatant: Yes	Crumb	Raspy	Light Brown	
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	2.3m Trial Hole Depth					
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: 30

Likely Surface Percolation Value: 20

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:

Trial hole dig stopped at 2.3m. No mottling or watertable observed in the trial hole. Will proceed to T and P tests.

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)	450	450	450
Depth from ground surface to base of hole (mm) (B)	850	850	850
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	14-Sep-2021	14-Sep-2021	14-Sep-2021
	Time	10:30	10:30	10:30
2nd pre-soak start	Date	14-Sep-2021	14-Sep-2021	14-Sep-2021
	Time	16:15	16:15	16:15

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	15-09-2021	15-09-2021	15-09-2021
Time filled to 400 mm	08:15	08:20	08:18
Time water level at 300 mm	10:07	10:11	10:09
Time (min) to drop 100 mm (T_{100})	112.00	111.00	111.00
Average T_{100}			111.33

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)	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	10:07	12:00	113.00	10:11	12:05	114.00	10:09	11:59	110.00
2	12:00	13:52	112.00	12:05	14:00	115.00	11:59	13:50	111.00
3	13:52	15:44	112.00	14:00	15:51	111.00	13:50	15:42	112.00
Average Δt Value			112.33			113.33			111.00
	Average Δt/4 = [Hole No.1]		28.08 (t_1)	Average Δt/4 = [Hole No.2]		28.33 (t_2)	Average Δt/4 = [Hole No.3]		27.75 (t_3)

Result of Test: Subsurface Percolation Value = 28.06 (min/25 mm)

Comments:

T value of 28 recorded for the site.

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	$K_{ts} = T_f / T_m$	T – Value = 4.45 / K_{ts}
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	$K_{ts} = T_f / T_m$	T – Value = 4.45 / K_{ts}
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

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	$K_{ts} = T_f / T_m$	T – Value = 4.45 / K_{ts}
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)			0.00

Result of Test: Subsurface Percolation Value = 0.00 (min/25 mm)

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

		1	2	3
Pre-soak start	Date	14-Sep-2021	14-Sep-2021	14-Sep-2021
	Time	10:35	10:35	10:35
2nd pre-soak start	Date	14-Sep-2021	14-Sep-2021	14-Sep-2021
	Time	16:20	16:20	16:20

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	15-Sep-21	15-Sep-21	15-Sep-2021
Time filled to 400 mm	08:00	08:02	08:05
Time water level at 300 mm	09:25	09:27	09:28
Time to drop 100 mm (T_{100})	85.00	85.00	83.00
Average T_{100}			84.33

If T_{100} > 300 minutes then Surface Percolation 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	09:25	11:00	95.00	09:27	11:04	97.00	09:28	11:04	96.00
2	11:00	12:34	94.00	11:04	12:42	97.00	11:04	12:40	96.00
3	12:34	14:10	96.00	12:42	14:20	98.00	12:40	14:15	95.00
Average ΔT Value			95.00			97.33			95.67
	Average ΔT/4 = [Hole No.1]		23.75 (T_1)	Average ΔT/4 = [Hole No.2]		24.33 (T_2)	Average ΔT/4 = [Hole No.3]		23.92 (T_3)

Result of Test: Surface Percolation Value = 24.00 (min/25 mm)

Comments:

P value of 24 recorded for the site.

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	$K_{ts} = T_f / T_m$	T – Value = 4.45 / K_{ts}
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	$K_{ts} = T_f / T_m$	T – Value = 4.45 / K_{ts}
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: Surface 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	$K_{ts} = T_f / T_m$	T – Value = 4.45 / K_{ts}
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)			0.00

Comments:

3.4 The following associated Maps, Drawings and Photographs should be appended to this site characterisation form.

1. Discovery Series 1:50,000 Map indicating overall drainage, groundwater flow direction and housing density in the area.
2. Supporting maps for vulnerability, aquifer classification, soil, subsoil, bedrock.
3. North point should always be included.
4. (a) Scaled sketch of site showing measurements to Trial Hole location and
   (b) Percolation Test Hole locations,
   (c) wells and
   (d) direction of groundwater flow (if known),
   (e) proposed house (incl. distances from boundaries)
   (f) adjacent houses,
   (g) watercourses,
   (h) significant sites
   (i) and other relevant features.
5. Site specific cross sectional drawing of the site and the proposed layout[1] should be submitted.
6. Photographs of the trial hole, test holes and site including landmarks (date and time referenced).
7. Pumped design must be designed by a suitably qualified person.

[1] The calculated percolation area or polishing filter area should be set out accurately on the site layout drawing in accordance with the code of practice's requirements.

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) [1.30]

Percolation test result: Surface: [24.00] Sub-surface: [28.00]

Not Suitable for Development [ ] **Suitable for Development** [✔]

Identify all suitable options

1. Septic tank system (septic tank and percolation area) **(Chapter 7)** [No]
2. Secondary Treatment System **(Chapters 8 and 9)** and soil polishing filter **(Section 10.1)** [Yes]
3. Tertiary Treatment System and Infiltration / treatment area **(Section 10.2)** [Yes]

Discharge Route[1]

Discharge to Ground Water

5.0 SELECTED DWWTS

Propose to install: Secondary Treatment System and soil polishing filter

and discharge to: Ground Water

Invert level of the trench/bed gravel or drip tubing (m) [-1.00]

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

Proposed on-site Effluent Treatment System: New P12 WWTS. System must be SR-66 certified.
Proposed Percolation System: I recommend installing a Pressurised Percolation Area. Given a T value of 28 and a P value of 24 and a maximum house capacity of 12 (based on epa revision Aug 2021), the pressurised percolation area is to be 180m².
This means that the polishing filter will be loaded at 10l/m²/day as per epa guidelines.
Location and install of the WWTS and polishing filter must comply with EPA code of practice 2021 and all manufacturers specification.
ONLY grey and foul water from the house and garage are to enter the WWTS. All storm water is to be diverted to separate soakpits.
Alternative solutions which comply with EPA code of practice 2021 along with the results of this percolation test may also be acceptable. A suitably qualified person must certify any amendments to the proposed design.
The size of the percolation area has been using the calculations which comply with the EPA COP Manual 1999 for Small Communities, Business & Leisure Centres and Hotels, calculation above in section 1.0.

[1] 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^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 (Chapters 8 and 9) and polishing filter (Section 10.1)

Secondary Treatment Systems receiving septic tank effluent (Chapter 8)

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

Packaged Secondary Treatment Systems receiving raw wastewater (Chapter 9)

Type: O'Reilly Oakstown WWTS BAF

Capacity PE: 12

Sizing of Primary Compartment: 4.00 m^3

Polishing Filter*: (Section 10.1)

Surface Area (m^2)*		Option 3 - Gravity Discharge Trench length (m)	
Option 1 - Direct Discharge Surface area (m^2)		Option 4 - Low Pressure Pipe Distribution Trench length (m)	
Option 2 - Pumped Discharge Surface area (m^2)	180.00	Option 5 - Drip Dispersal Surface area (m^2)	

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

DISCHARGE ROUTE:

Groundwater	✔	Hydraulic Loading Rate * (l/m^2.d)	10.00	Surface area (m^2)	180.00
Surface Water **		Discharge Rate (m^3/hr)			

* 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

The BAF system will be installed and commissioned by O'Reilly Oakstown Ltd. The construction of the polishing filter will be carried out by the owner and supervising engineer, and will be certified on completion to comply with the EPA Code of Practice.

On-going Maintenance

Maintenance contract to be set up between the owner and O'Reilly Oakstown Ltd, for an annual inspection and maintenance, periodic desludging required.
The polishing filter should be inspected regularly for ponding.

7.0 SITE ASSESSOR DETAILS

Company: PercolationTests.ie

Prefix: Mr First Name: David Surname: Ryan

Address: Newtownmoyaghy
Kilcock
Co. Meath

Qualifications/Experience: EPA Qualified Site Assessor. IIS Qualified Land Surveyor.

Date of Report: 01-Nov-2021

Phone: 0876636757 E-mail percolationtests@gmail.com

Indemnity Insurance Number: PID00024862

Signature: 

Frank O'Gorman,
Tea Rooms,
Cruagh,
Rockbrook,
Co. Dublin

O'Reilly Oakstown Environmental

O'Reilly Oakstown Environmental

Oakstown, Trim
Co. Meath
Tel: 046 - 943 - 1389
Fax: 046 - 943 - 7054

E: info@oreillyoakstown.com
W: www.oreillyoakstown.com
V.A.T Reg. No.: IE 6401624D
Company Reg. No.: 381624

OAKSTOWN
BAF System

Date: 02nd November 2021

Applicant Name: Frank O'Gorman

Site Address: Tea Rooms, Cruagh, Rockbrook, Co. Dublin

Design Capacity: 6 Staff Members
90 Customers

A representative of *O'Reilly Oakstown Ltd* has assessed the Soil Test Report and confirms the suitability of their Oakstown BAF 12 PE Wastewater Treatment System to treat effluent being discharged from the above proposed dwelling based on the residential demands submitted to us above.

1. Waste Water Treatment System Design Details:

- Maximum Capacity Design Loadings:

Max No. of users	Flow Litres/day/person	Total Hydraulic Load	B0D5 (grams/day/person)	Total Organic Loading (grams/day)
12	150	1800 litres	60	720

- Maximum Daily Design Loadings as per client:

Total Organic Loading	0.54kg BOD/day
Total Hydraulic loading	1.71m³ /day

- Average treated effluent standard - see performance results on EN-12566-3 certification attached

BOD	8mg/litre
TSS	12mg/litre
Ammonia	13mg/litre

- Proposed system details: ► Oakstown BAF 12 P.E.

Volume of Total Plant	9.5m³
Volume of Primary Sedimentation Chambers	4.75m³
Volume of Secondary Aeration Chamber	2m³
Volume of Biomedia	1.3m³

O'REILLY
OAKSTOWN
ENVIRONMENTAL

O'Reilly Oakstown Environmental

Oakstown, Trim
Co. Meath
Tel: 046 - 943 - 1389
Fax: 046 - 943 - 7054

E: info@oreillyoakstown.com
W: www.oreillyoakstown.com
V.A.T Reg. No.: IE 6401624D
Company Reg. No.: 381624

OAKSTOWN
BAF System

2. Wastewater Treatment system description:

The Oakstown BAF 12 PE is designed to provide proven, cost effective primary and secondary wastewater treatment in robust steel reinforced concrete tanks.
The primary sedimentation chambers have substantial capacity (4.75m³) to allow anaerobic digestion to occur naturally while letting sludge settle on the tank floor.
Once primary treatment has taken place the effluent is further degraded in the aeration chamber where oxygen enriched wastewater provides ideal conditions for aerobic bacteria to thrive.
Before pumping to the percolation area the clear water is left to further settle in the clarifier chamber to eliminate any remaining settle able solids.

3. Guarantee and warrantees:

O'Reilly Oakstown provide a 12 month maintenance service contract on all systems from date of first occupation. We provide a 24 month warranty on all parts.

4. Percolation:

The percolation area designed must conform to the requirements of Chapters 8 & 10 of EPA Code of Practice 2021 Wastewater Treatment and Disposal System serving single houses.

The percolation area requirements are as follows:
Groundwater Protection Response: R2[1]
T-value: 28.06 as per Site Characterisation Form.
P-value: 24.00 as per Site Characterisation Form.
Depth from ground surface to water table: None Encountered BGL.
Depth from ground surface to bed rock: None Encountered BGL.
Depth from ground surface to mottling: None Encountered BGL.
Area of Soil Polishing filter: 180m².
Soil Polishing Filter must be covered in 25-40mm drainage stone.
Soil Polishing Filter must be covered in geo-textile cover then in topsoil.
►See Site Characterisation report for percolation area details.

O'REILLY
OAKSTOWN
ENVIRONMENTAL

O'Reilly Oakstown Environmental

Oakstown, Trim
Co. Meath
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Fax: 046 - 943 - 7054

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Company Reg. No.: 381624

OAKSTOWN
BAF System

5. Client Responsibilities unless included in our quotation:

- Excavation and backfill.
- Construction of the percolation / polishing filter as recommended by the site engineer on the Site Characterisation report and/or drawing.
- Provision of access for delivery by hi-ab truck to within 3 metres of the excavation.
- Provision of a power ducting from the tanks to the house/garage.
- Mounting and connection of control panel to mains power in the house/garage.

6. Operation and Maintenance:

The client is responsible for the operation and maintenance of the wastewater treatment system in accordance with the owner's manual supplied by O'Reilly Oakstown.

Please do not hesitate to contact us if there are any further queries.

Yours sincerely

Sarah O'Connor

O'REILLY
OAKSTOWN
ENVIRONMENTAL

O'Reilly Oakstown Environmental

Oakstown, Trim
Co. Meath
Tel: 046 - 943 - 1389
Fax: 046 - 943 - 7054

E: info@oreillyoakstown.com
W: www.oreillyoakstown.com
V.A.T Reg. No.: IE 6401624D
Company Reg. No.: 381624

OAKSTOWN
BAF System

This contract is between O'Reilly Oakstown Limited (The Company) and

_____

(The owner) of system No: _____

In relation to the maintenance of The Oakstown Domestic BAF Waste Water Treatment System (The system) associated with a domestic dwelling located at

Address:_____

_____

_____

Telephone: _____

Purpose of the contract.

The purpose of this contract is to provide for the annual inspection and servicing of the system installed at the above address as stated.

Duration of Contract

This contract is for a period of twelve months to commence upon the date on which both parties affix their signatures to this copy of the standard agreement. The annual fee for the first year's maintenance is included in the price of the system. A further maintenance contract will be offered for the years thereafter.

Scope of Contract.

The scope of the contract is restricted to the holding and treatment tanks, associated blowers, electric motors and fittings which comprise the original system as installed by the company or their approved representatives.

Exclusions

This contract excludes all percolation and drainage areas associated with the system together with any other drainage or treatment system in use on the same site or connected to the same domestic premises. Also excluded are treatment systems connected to any premises other than private domestic dwellings.

The provisions of this contract, in addition, do not apply to any system that has been the subject of alteration by the customer or their representative following installation by the company.

Features of the Contract

The service contract provides the following:

A yearly inspection of the system which reviews and addresses the following.

- A review of the electric control panel.
- Inspection of air filter and replacement if necessary.
- A general inspection of the installation to ensure that optimum operating conditions are being maintained
- A functional test of the system to verify that pumps and blowers are operating as required.
- The completion of a service report and the submission of same to the householder/occupier.

Emergency Call Out Facility

In addition to the provisions of a standard service inspection, the features of this contract include an emergency call out facility. The facility operates on the following basis:

- Calls received on or before 11.00 a.m. will generally be attended to on day of receipt.
- Calls made after that time may be attended to on the same day but will in any event be attended to the on the following day or as soon as possible thereafter.
- Service and emergency calls should where possible be made during normal office hours.
- Prior to making an emergency call, system users are requested to ascertain the nature if the presenting defect and to be prepared to provide this information to the company personnel receiving the call.
- In the event that telephone instructions can correct the problem the system user will be provided with the appropriate instructions.

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OAKSTOWN
BAF System

- Should a site visit prove necessary the company personnel involved will on the basis of information supplied, evaluate the circumstances involved and schedule a service call on the basis of supplied information
- If deemed necessary, company personnel may issue temporary instruction to minimise the impact of the source of the problem.
- Service call reports are completed upon the conclusion of each visit.

Materials and Components

Materials and components supplied as a result of contract or emergency site visit will be the itemised on reports and will be subject of charges where necessary in addition to the annual contract fee.

Annual Contract Fee

There is no annual contract fee for the first year. A contract fee will be charged for the maintenance contract thereafter. The contract fee will be that prevailing at the time the contract is signed and will be subject to annual review thereafter.

Contract fees are subject to the addition of VAT at the prevailing rates applicable on the date of acceptance and approval of the contract.

Cancellation of Contract.

Service contracts may be cancelled by the issuance of written notice within a fourteen day period prior to the renewal date.

Confirmation and Acceptance

The parties to this contract signify their acceptance of the terms and conditions of same through the appendage of their signatures below and confirmation of receipt of the specified annual contract fee.
This contract becomes effective for the full period as stated upon the appendage of signatures by both parties and the payment of the annual contract fee to the company by the customer.

Signed:_____
On behalf of O'Reilly Oakstown Limited, Trim, Co. Meath.

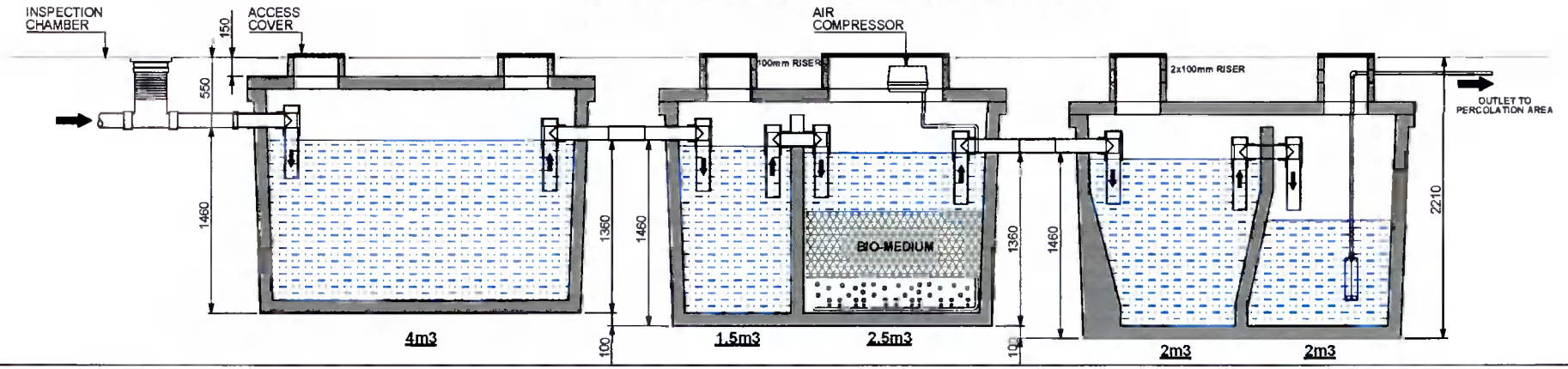
Signed: _____
The customer

Date of signing: _____

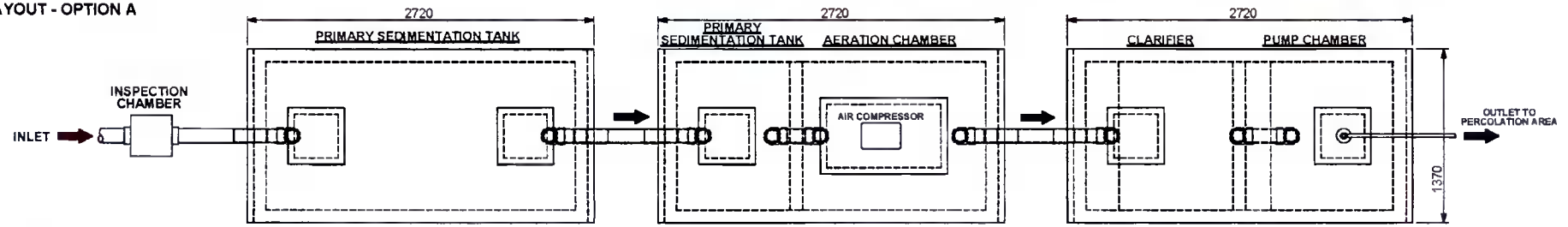
Note: The Oakstown BAF Wastewater Treatment System provides the optimum conditions to allow both anaerobic and aerobic bacteria to break down household effluent in an efficient and odour free process. However, to keep your system working properly please remember to use non-biological washing powders with low levels of phosphates, minimise use of bleach and caustic sodas and never allow grease, cooking oil or household chemicals into the system.

O'REILLY
OAKSTOWN
ENVIRONMENTAL

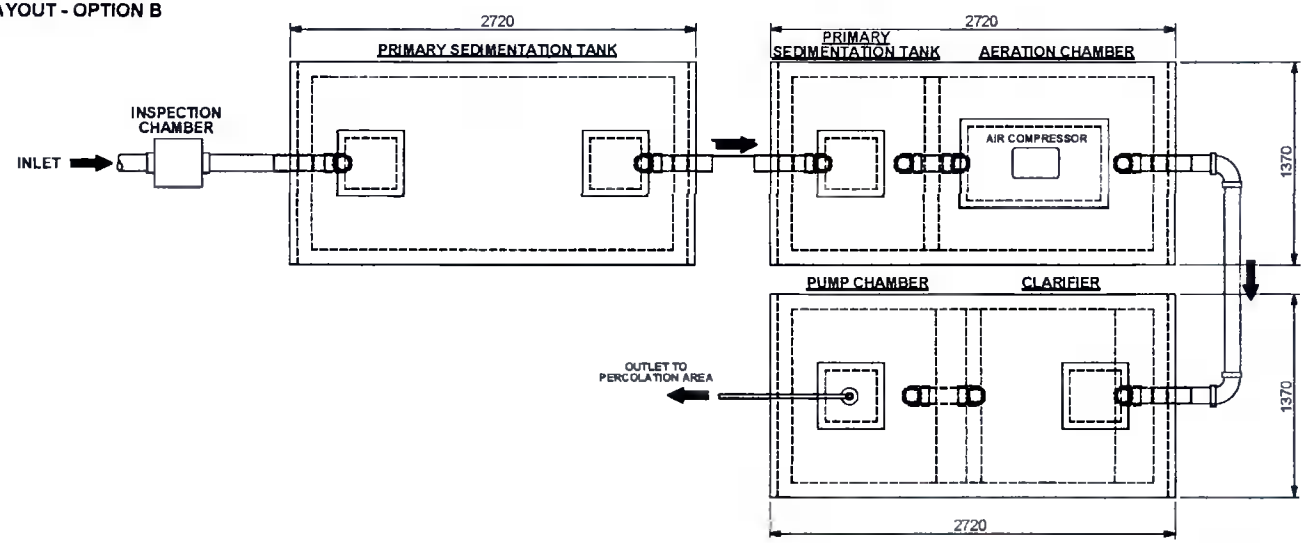
Oakstown 12PE SUPER BAF SYSTEM Sectional Elevation



WWTS LAYOUT - OPTION A



WWTS LAYOUT - OPTION B



VOLUME:

LITRES: 12000

WEIGHT:
TANK 1: 5000kg
TANK 2: 5500kg
TANK 3: 6000kg

PROJECT: SR-66 O'Reilly Oakstown

TITLE: 12PE SUPER BAF SYSTEM

DRAWN: I. Nicinski

CHECKED: D. O'Reilly

O'REILLY —concrete—

O' REILLY OAKSTOWN LTD.
BAF - WASTEWATER TREATMENT SYSTEMS

O'REILLY OAKSTOWN
TRIM Co.MEATH
E-mail: info@oreillyoakstown.com
Tel (046)9431389 Fax (046)9437054

SCALE	DWG NO	REV	DATE
N.T.S.	OAKS 201703	SR66	12/2016

Prüfinstitut für Abwassertechnik GmbH

TREATMENT PERFORMANCE RESULTS

O'Reilly Oakstown Environmental Ltd.
Oakstown, Trim, Co. Meath, Ireland

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

PIA-SR66-1603-1036

Oakstown BAF System
Submerged aerated fixed film bioreactor

Nominal organic daily load	0.38 kg/d		
Nominal hydraulic daily load	1.20 m³/d		
Material	Concrete		
Watertightness	Pass		
Structural behaviour (Calculation)	Pass (also wet conditions)		
Durability	Pass		
Treatment efficiency (nominal sequences)		Efficiency	Effluent
	COD	93.0 %	46 mg/l
	BOD_5	97.5 %	8 mg/l
	NH_4-N	61.0 %	13 mg/l
	SS	96.7 %	12 mg/l
Number of desludging	Not more than once		
Electrical consumption	2.0 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

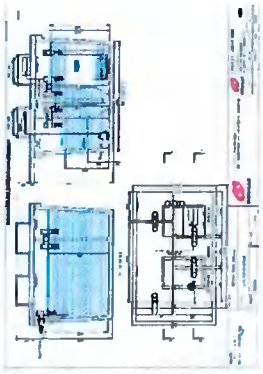
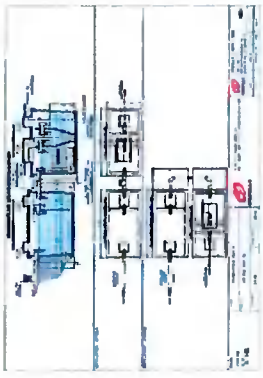
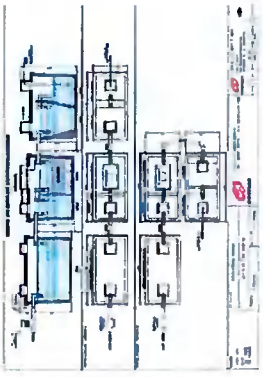
Certified according to ISO 9001 2008

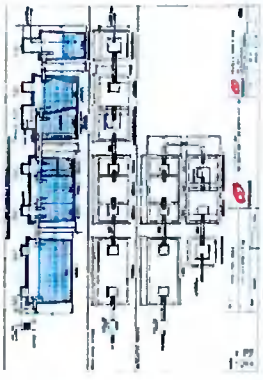
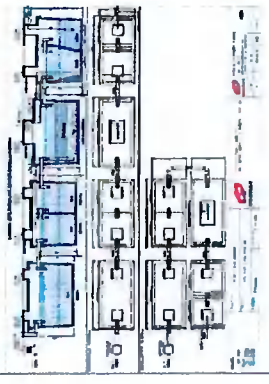
DAkkS Deutsche Akkreditierungsstelle D-PL-17712-01-00

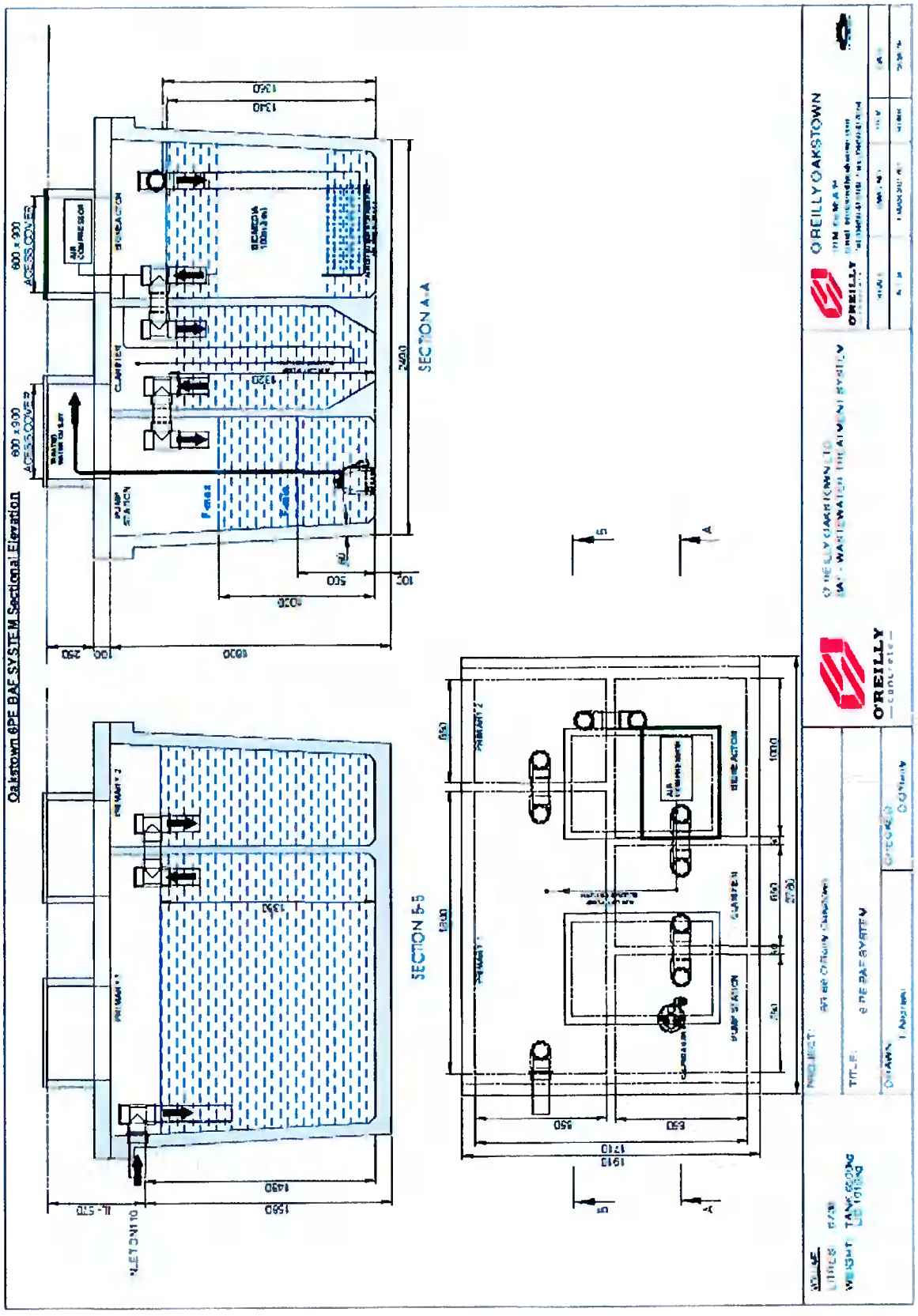
Prüfinstitut für Abwassertechnik GmbH
Geprüft - tested - testé

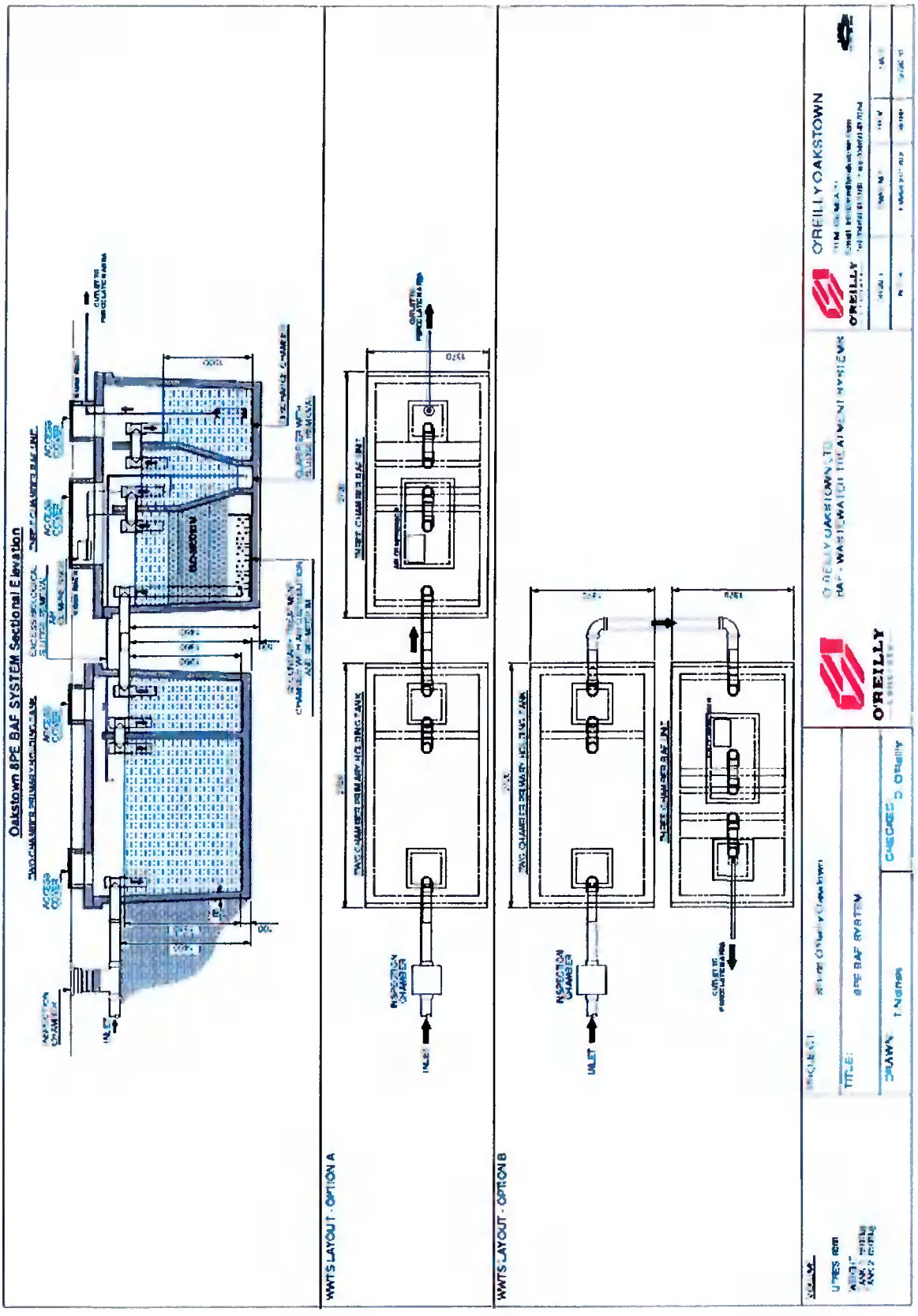
Elmar Lance January 2017

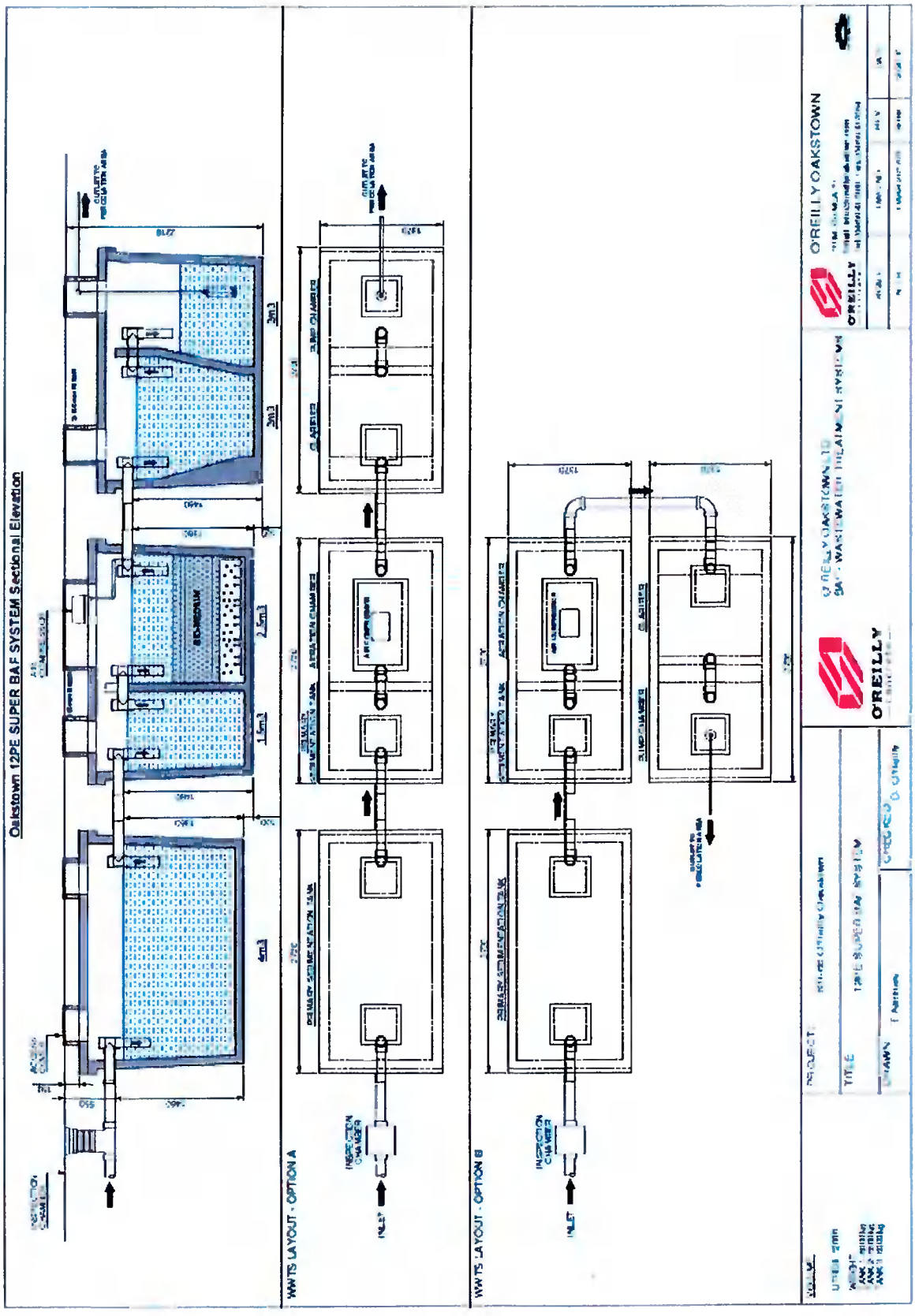
Oakstown BAF range and its referring test reports:

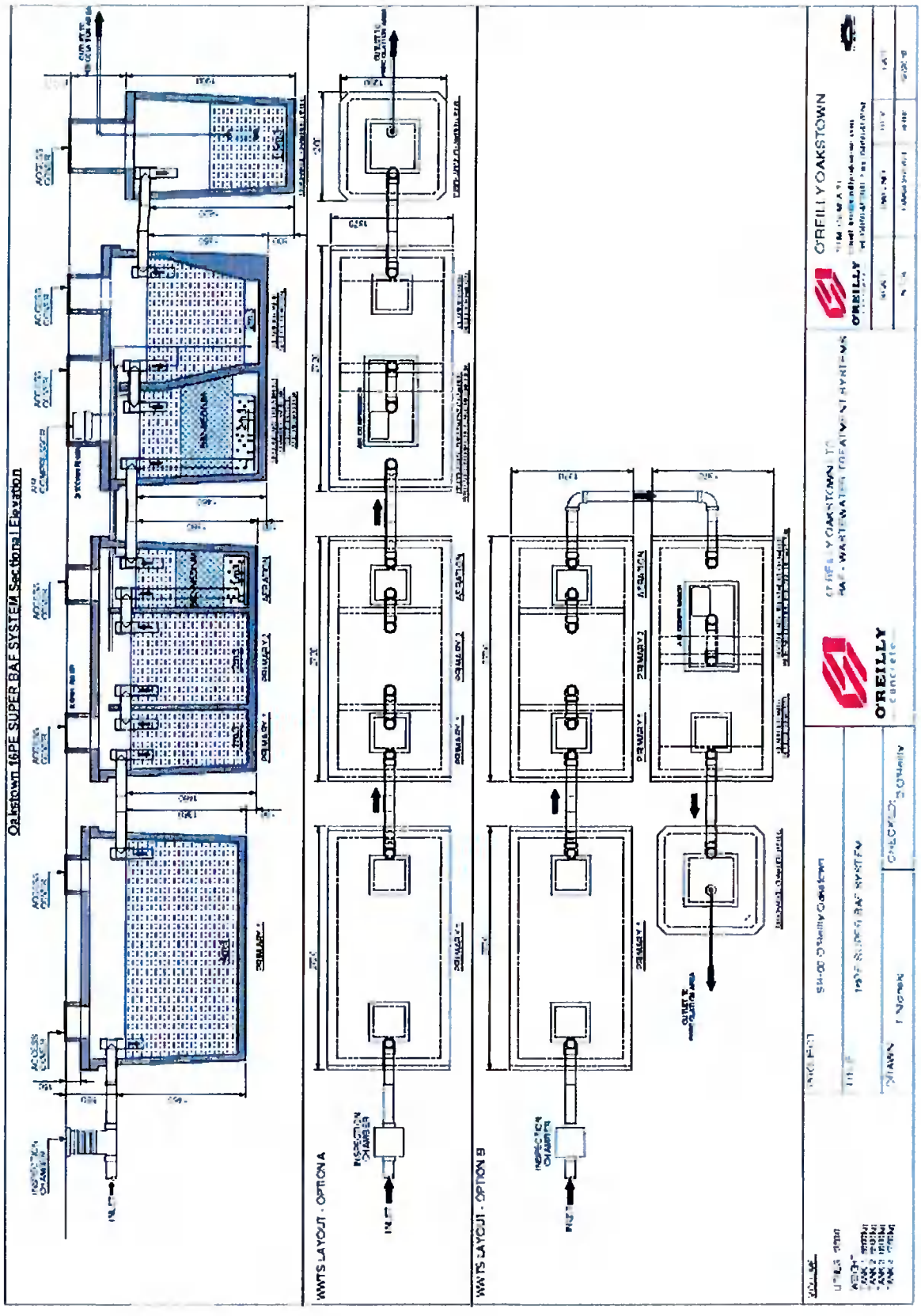
Population equivalent (PE)	Drawing of model of the range	Watertightness (EN 12566-3 Annex A)	Treatment Efficiency (EN 12566-3 Annex B)	Structural Behaviour (EN 12566-3 Annex C)	Durability
6 PE		Pass PIA2016-WD-1603-1036.02	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, installation depth 1.50 m from inlet invert	Pass PIA2017-DH-1603-1036.01
Initial Type Test (ITT) 8 PE		Pass PIA2012-WD/NC-1209-1059	Pass PIA2008-094B04	Pass PIA2009-ST-AT0809-1071 For wet ground conditions also, installation depth 1.50 m from inlet invert	Pass PIA2017-DH-1603-1036.01
12		Pass PIA2016-WD-1603-1036.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, installation depth 1.50 m from inlet invert	Pass PIA2017-DH-1603-1036.01

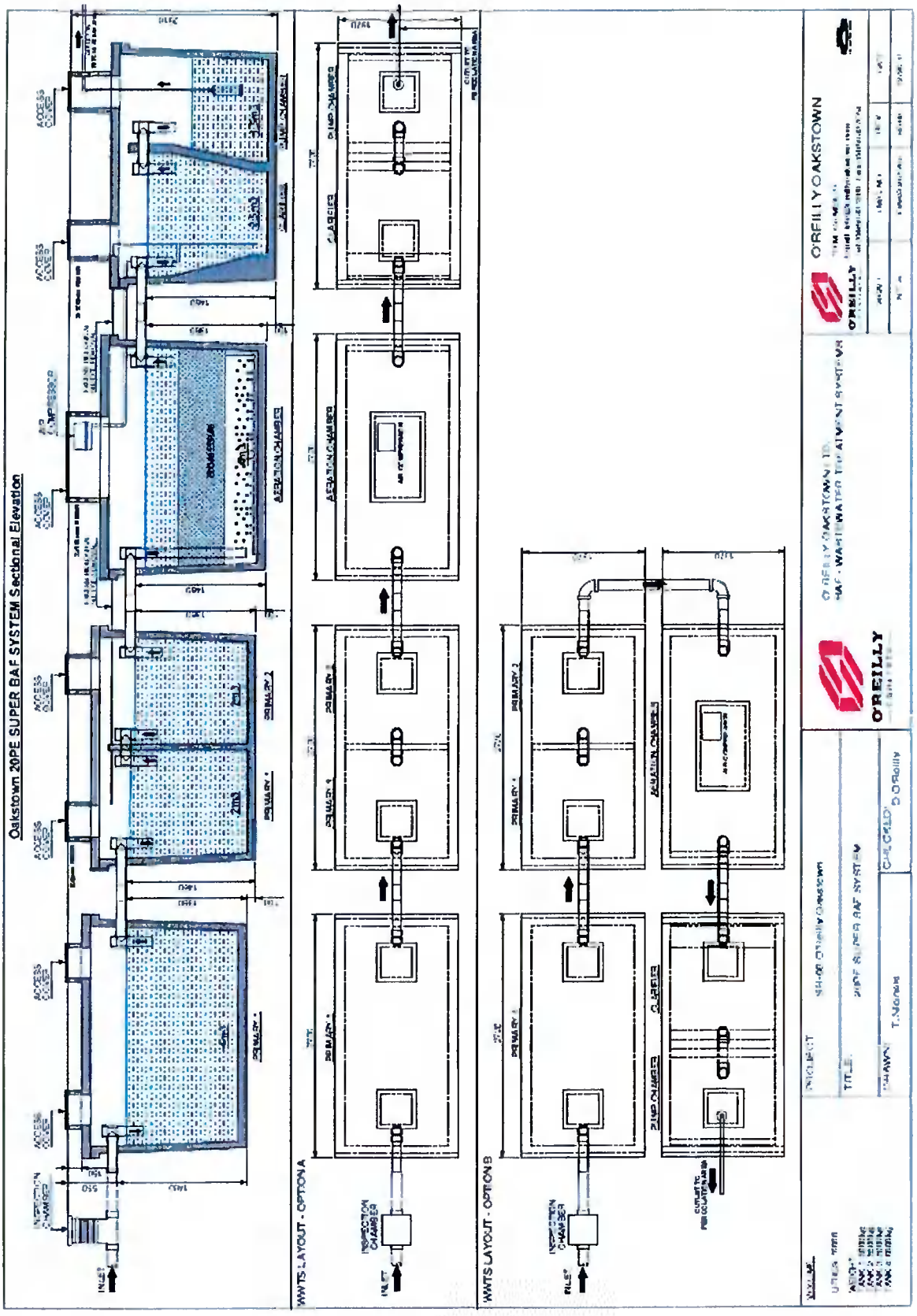
Population equivalent (PE)	Drawing of model of the range	Watertightness (EN 12566-3 Annex A)	Treatment Efficiency (EN 12566-3 Annex B)	Structural Behaviour (EN 12566-3 Annex C)	Durability
16		Pass PIA2016-WD-1603-1036.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, installation depth 1.50 m from inlet invert	Pass PIA2017-DH-1603-1036.01
20		Pass PIA2016-WD-1603-1036.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, installation depth 1.50 m from inlet invert	Pass PIA2017-DH-1603-1036.01


Oakstown 6PE BAF SYSTEM Sectional Elevation
SECTION A-A
SECTION B-B
O'REILLY OAKSTOWN
O'REILLY


Oakstown 6PE BAF SYSTEM Sectional Elevation
WWTS LAYOUT - OPTION A
WWTS LAYOUT - OPTION B
O'REILLY OAKSTOWN
O'REILLY
6PE BAF SYSTEM
T Nolan
O'Reilly


Oakstown 12PE SUPER BAF SYSTEM Sectional Elevation
WWTS LAYOUT - OPTION A
WWTS LAYOUT - OPTION B
O'REILLY OAKSTOWN
O'REILLY


Oakstown 16PE SUPER BAF SYSTEM Sectional Elevation
WWTS LAYOUT - OPTION A
WWTS LAYOUT - OPTION B
O'REILLY OAKSTOWN
O'REILLY


Oakstown 20PE SUPER BAF SYSTEM Sectional Elevation
WWTS LAYOUT - OPTION A
WWTS LAYOUT - OPTION B
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O'REILLY

PercolationTests.ie

Planning Assessments & Land Surveys

Tel: 087 6636 757 Email: percolationtests@gmail.com Web: www.percolationtests.ie

Site During Testing

Trial Hole

PercolationTests.ie

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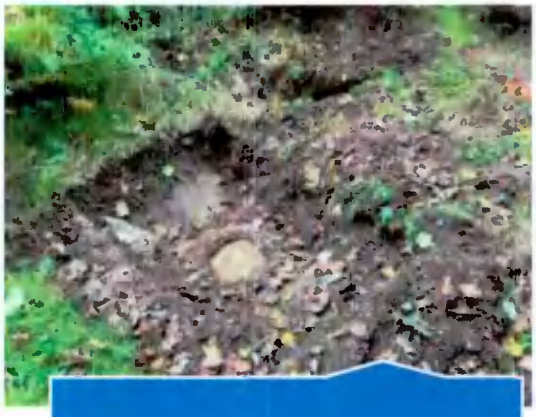
Tel: 087 6636 757 Email: percolationtests@gmail.com Web: www.percolationtests.ie



T1 & P1

T2 & P2

T3 & P3

FETAC
Comhairle na nDámhachtaini
Breisoideachais agus Oiliúna
Further Education and
Training Awards Council

Teastas Cuspóra Shainiúil Leibhéal 6
Level 6 Specific Purpose Certificate

Site Suitability for Wastewater Treatment

Pas
Pass

Bronnta ar
Awarded to

DAVID RYAN

14/10/2012

F0283655 722383

FETAC

FETAC

SOUND INSURANCE

You're safe with *Sound*.

Sound Insurance
Unit 7 Burnell Court
Northern Cross
Malahide Road
Dublin 17

E: emailus@sound.ie
T: +353 1 524 2800

sound.ie

David Ryan
Newtownmoyaghy
Kilcock
Co Meath

Date: 06/04/2021
Reference: RYDA01001

INSURANCE CERTIFICATE

To Whom It May Concern

We confirm we act as Insurance Brokers to the above and set out below a summary of cover we have arranged:

Business Description: *Soil Engineer (Percolation Testing)*

PROFESSIONAL INDEMNITY

Policy No:	**PID00024862**
Provider:	**Optio Europe Ltd**
Insurer:	**Accredited Insurance (Europe) Ltd**
Period of Insurance:	**04/03/2021 to 03/03/2022**
Limit of Indemnity:	**€1,000,000**

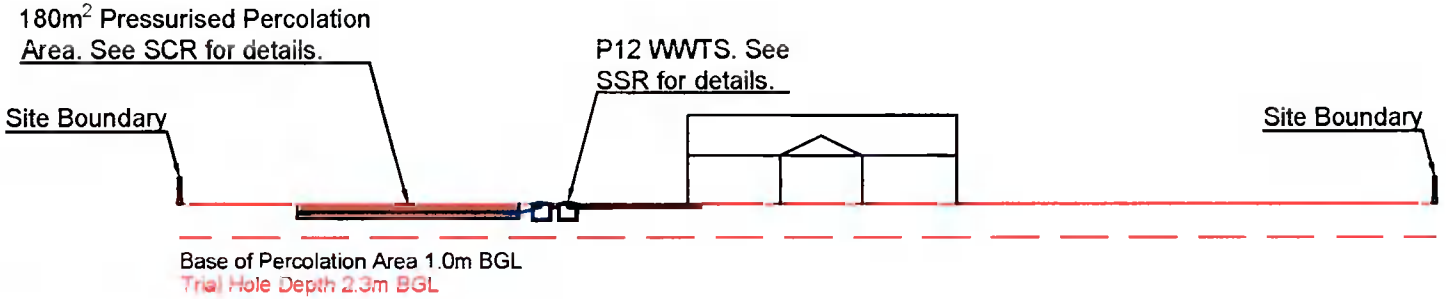
Subject always to Insurers policy wording, warranties, conditions, restrictions & exclusions a copy of which is available on request.

We trust this is in order but if you have any queries, please do not hesitate to contact us.

Yours sincerely,

Gary Kinsella
Commercial Broker
P: (01) 524 1415
E: Gary@sound.ie

Scale 1:500



USE FIGURED DIMENSIONS IN PREFERENCE TO SCALING FROM DRAWINGS
ALL MEASUREMENTS, HEIGHTS, AREAS, LEVELS AND CONSTRUCTIONAL DETAILS TO BE CHECKED AND VERIFIED BY THE BUILDING CONTRACTOR, SUB-CONTRACTOR OR DIRECT LABOUR CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY WORKS OR AGREEMENTS

CLIENT: Frank O'Gorman

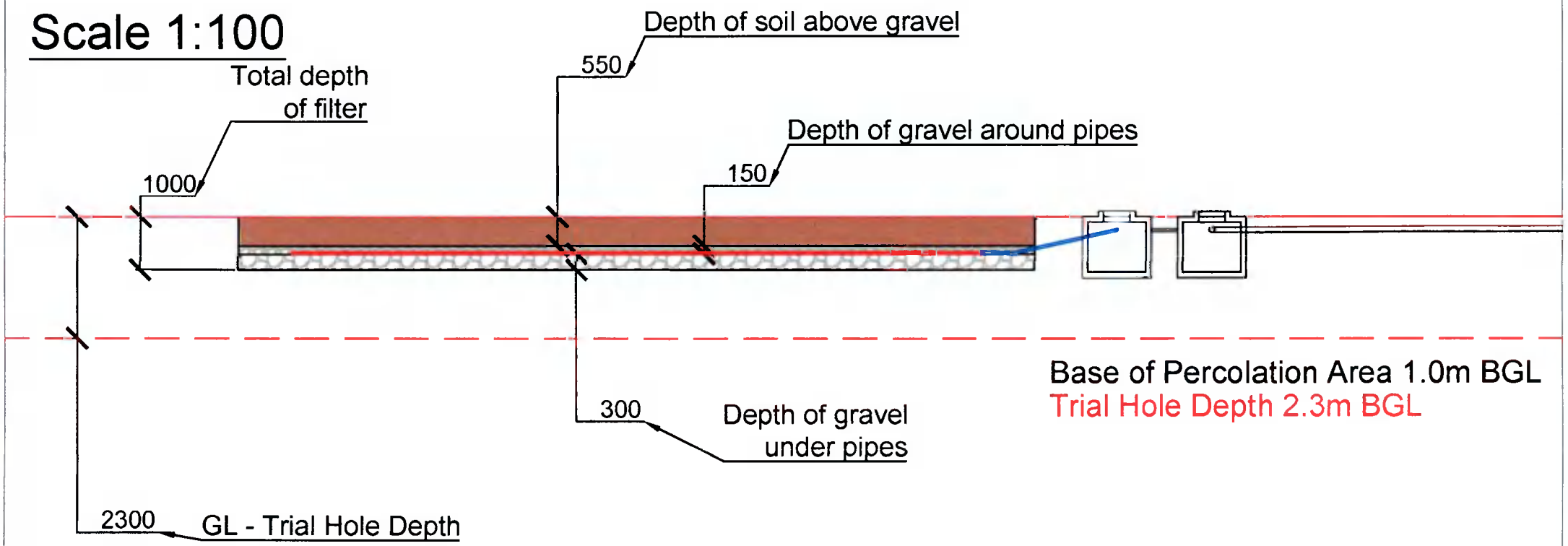
PROJECT: Tea Rooms, Cruagh, Rockbrook, Co. Dublin.

DAVID RYAN
Site Suitability Assessments & Land Surveys
Newtownmoyaghy
Kilcock
Co.Meath
Ireland
Mobile: 0876636757
Email: percolationtests@gmail.com

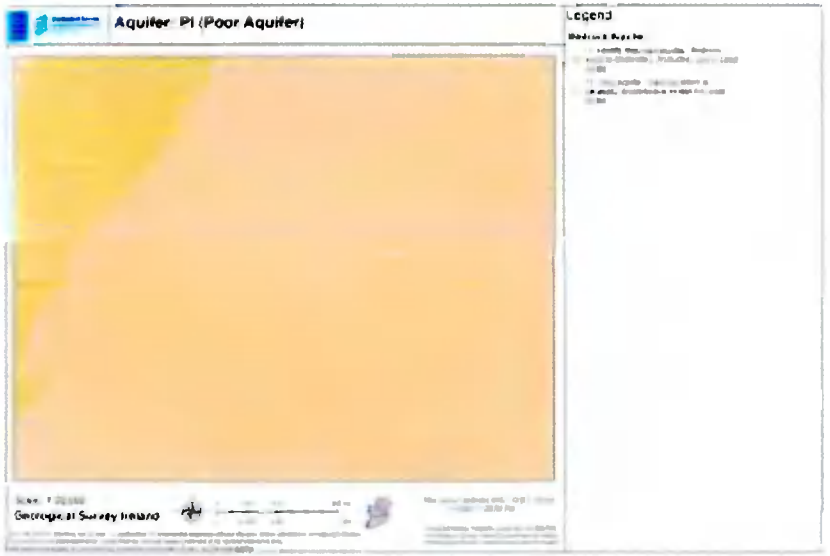
DRAWN BY	SCALE
	1:500
ISSUE DATE	DRAWING NUMBER
05/11/2021	

FOR PLANNING PURPOSES ONLY

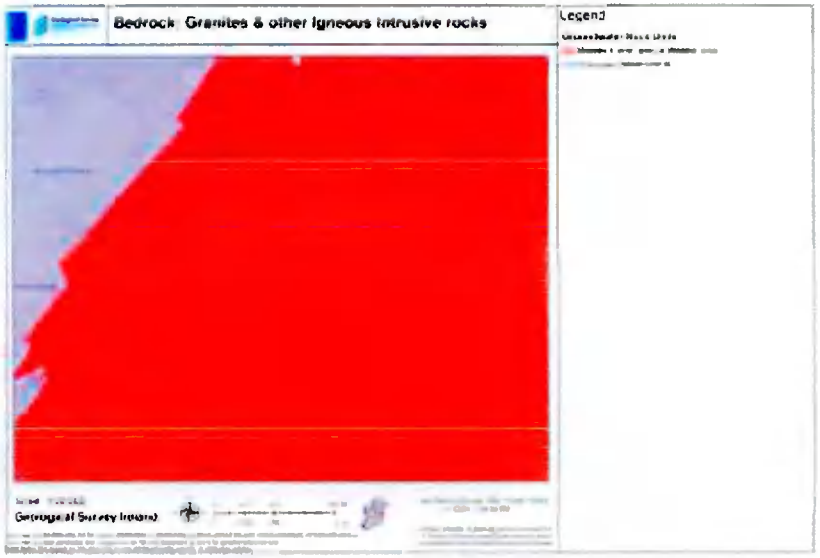
Scale 1:100



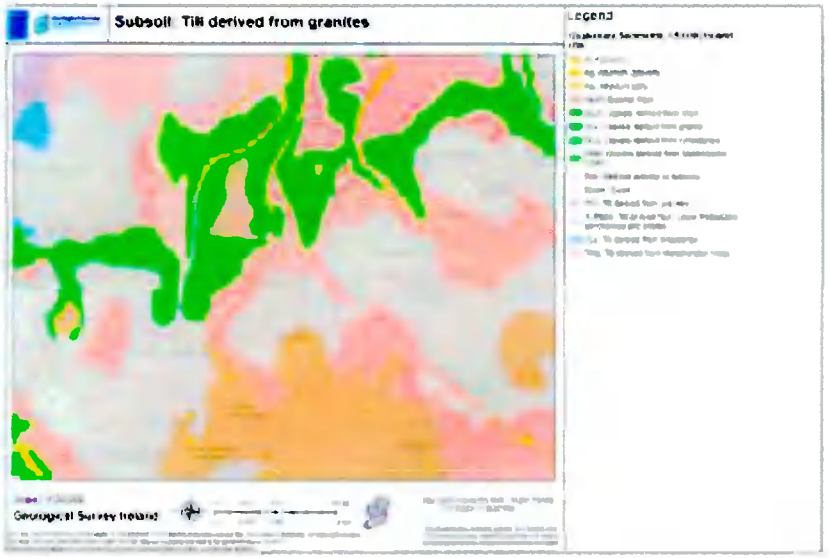
Aquifer Map



Bedrock Map



Subsoil Map



Vulnerability Map