Overview

This report is proposing an upgrade to the existing public toilets at Maherabeg beach.

The P.E. has been advised to us as 30.

In this proposal the local authority is proposing to upgrade and improve the on-site system.

The amenity is currently served by an old style septic tank and soak-pit.

This system should be replaced and improved. The E.P.A advice allows existing systems to upgrade and improve unsuitable systems with results outside the conditions set out for new amenities.

It would be in the best interest of all parties, their neighbor's and the local authority to improve the in-situ system.

Please find attached the S.C.R. form and supporting paperwork with drawings to apply for the upgrade of the in situ septic tank system.

APPENDIX A: SITE CHARACTERISATION FORM

(1)

File Reference:

1.0 GENERAL DETAILS (From planning application)

Prefix: First Name: Kerry County Surname: Council

Address:

Site Location and Townland: Magherbeg, Castlegregory. Co. Kerry

Number of Bedrooms: 7 Maximum Number of Residents: 30

Comments on population equivalent **As per loading information supplied by the client & their agent.**

The client and planning agent have confirmed to us that the P.E of this project is 30PE.
They have supplied figures based on current usage and projected an increase to 30PE.

Proposed Water Supply:

Mains ☑ Private Well/Borehole ☐ _____ Group Well/Borehole ☐

2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type): Windblown sands (Wsd) (Soil Code : AeoVND)

Subsoil, (Specify Type): Windblown sands and dunes (Wsd)

Bedrock Type: Dinantian Pure Unbedded Limestones (DPUL)

Aquifer Category: Regionally Important | Locally Important LI Poor

Vulnerability: Extreme ☐ High ☑ Moderate ☐ Low ☐

Groundwater Body: Brandon Head Status Good

Name of Public/Group Scheme Water Supply within 1 km: None

~~Source Protection Area: ZOC ☐ SI ☐ SO ☐~~ Groundwater Protection Response: R2[1]

Presence of Significant Sites (Archaeological, Natural & Historical): Beach is adjacent to this site (see layout)

Past experience in the area: Medium percolation rates locally

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).

There is no reason found in this desk study to restrict the upgrading of this existing system. We will proceed to testing.

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

(2)

System Loading Sheet

Maherabeg Beach

Load information for toilet and shower block supplied by M.W.P Total Hydraulic Load
3,480 Litres

Total 3480 litres

3480 litres divided by 150 litres (load per person) = 23.2 P.E. Say (24 P.E.)

150 litres

The client has decided to propose a 30pe unit so in order to have extra capacity.

These figures are supplied by the client based on their good research and allow for a situation where the visitor numbers may increase over time and allow for slightly extra busy periods.
Figures sheet supplied by client and their agent.

HOUR	NO. OF PERSONS (wc & shower)	LITRES USED			TOTAL (litres)
		WC	WHB	SHOWER	
08:00-09:00	5 & 0	25	5	0	30
09:00-10:00	15 & 2	75	15	90	180
10:00-11:00	25 & 3	125	25	135	285
12:00-13:00	35 & 5	175	35	225	435
13:00-14:00	45 & 6	225	45	270	540
14:00-15:00	35 & 4	175	35	180	390
15:00-16:00	25 & 2	125	25	90	240
16:00-17:00	25 & 3	125	25	135	345
17:00-18:00	25 & 6	125	25	270	420
18:00-19:00	20 & 6	100	20	270	390
19:00-20:00	10 & 2	50	10	90	150
20:00-21:00	5 & 1	25	5	45	75
[redacted]					
TOTAL DAILY LOADING ON SYSTEM					[redacted]

N.B. - Sizing of effluent system is based on usage figures supplied by the client and their agent .

Brandon Bay

Cloghaalhu

Tralee Bay

Lough Naddirka

MAGHERABEG

Caravan Park

Caravan Park

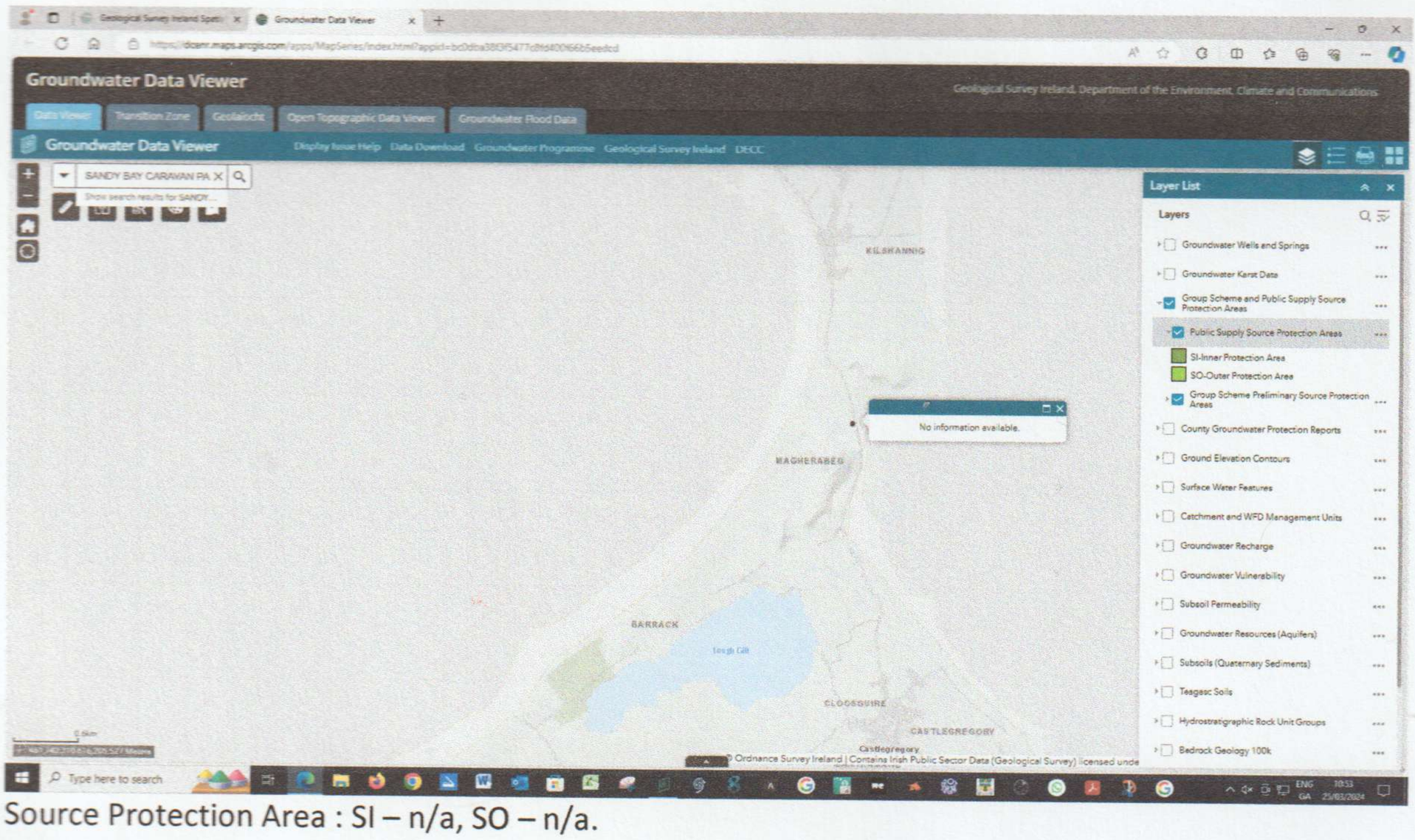
Caravan Park

Brandon Bay

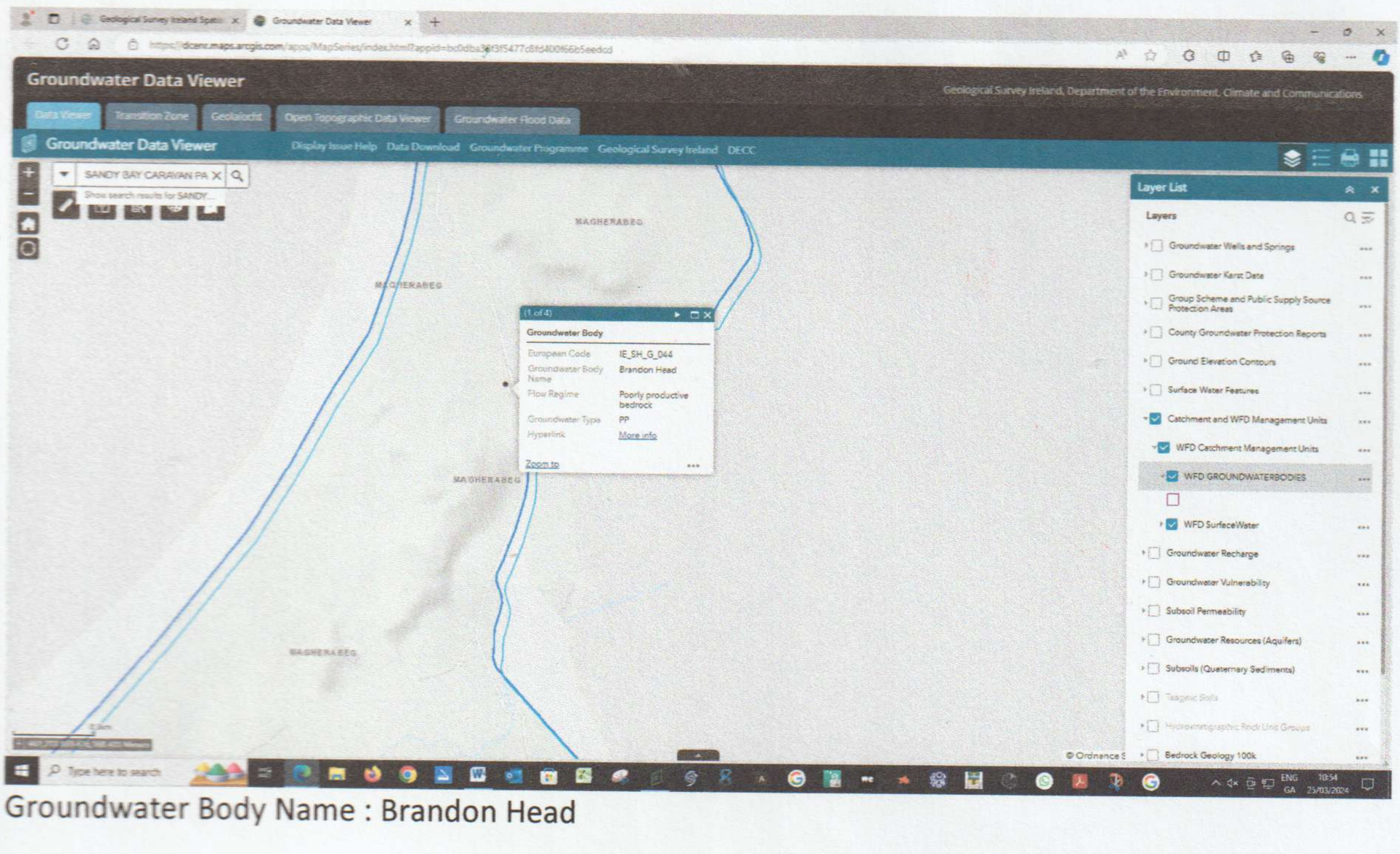
Tralee Bay

Tralee Bay

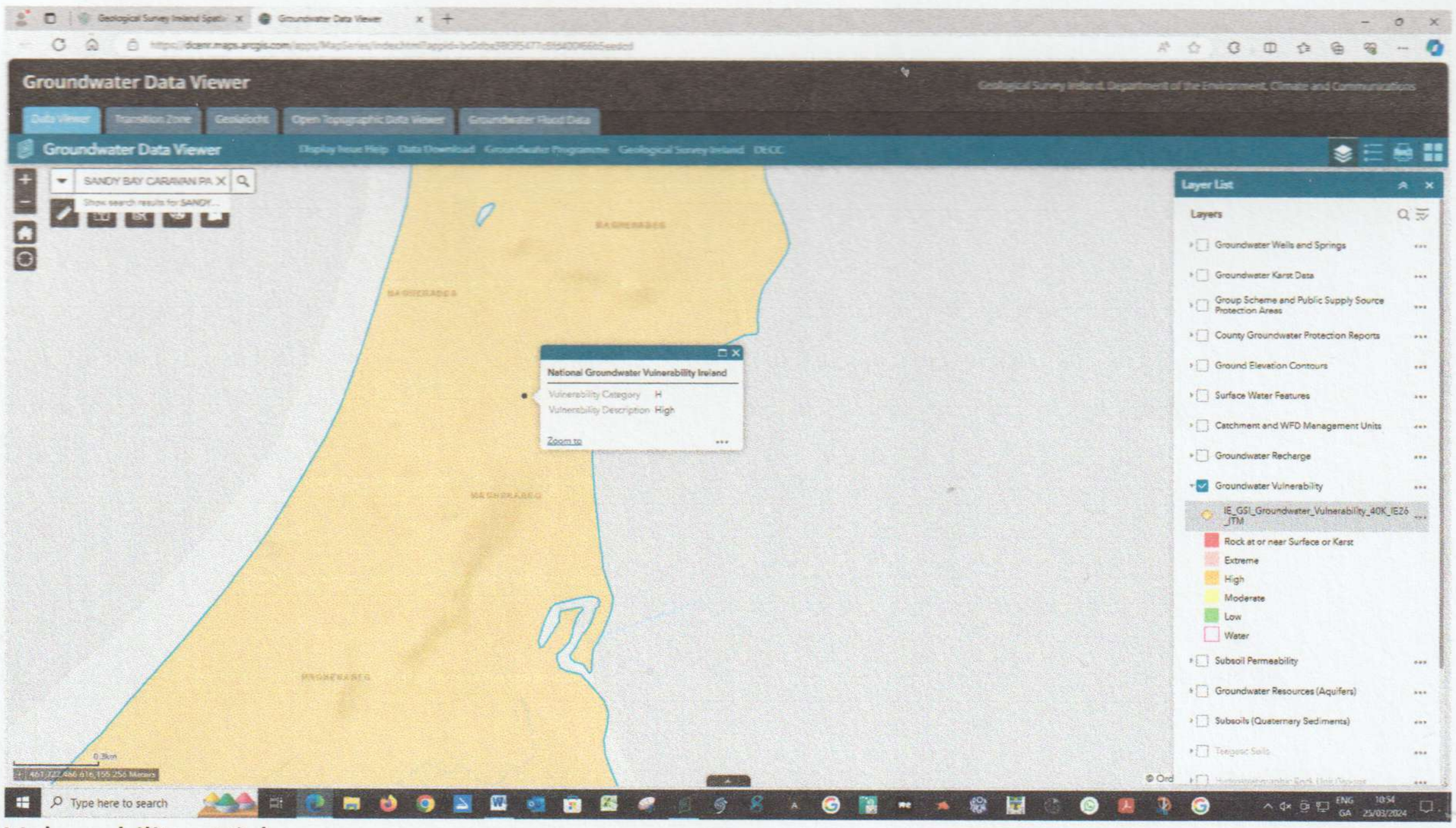
Maherbeg



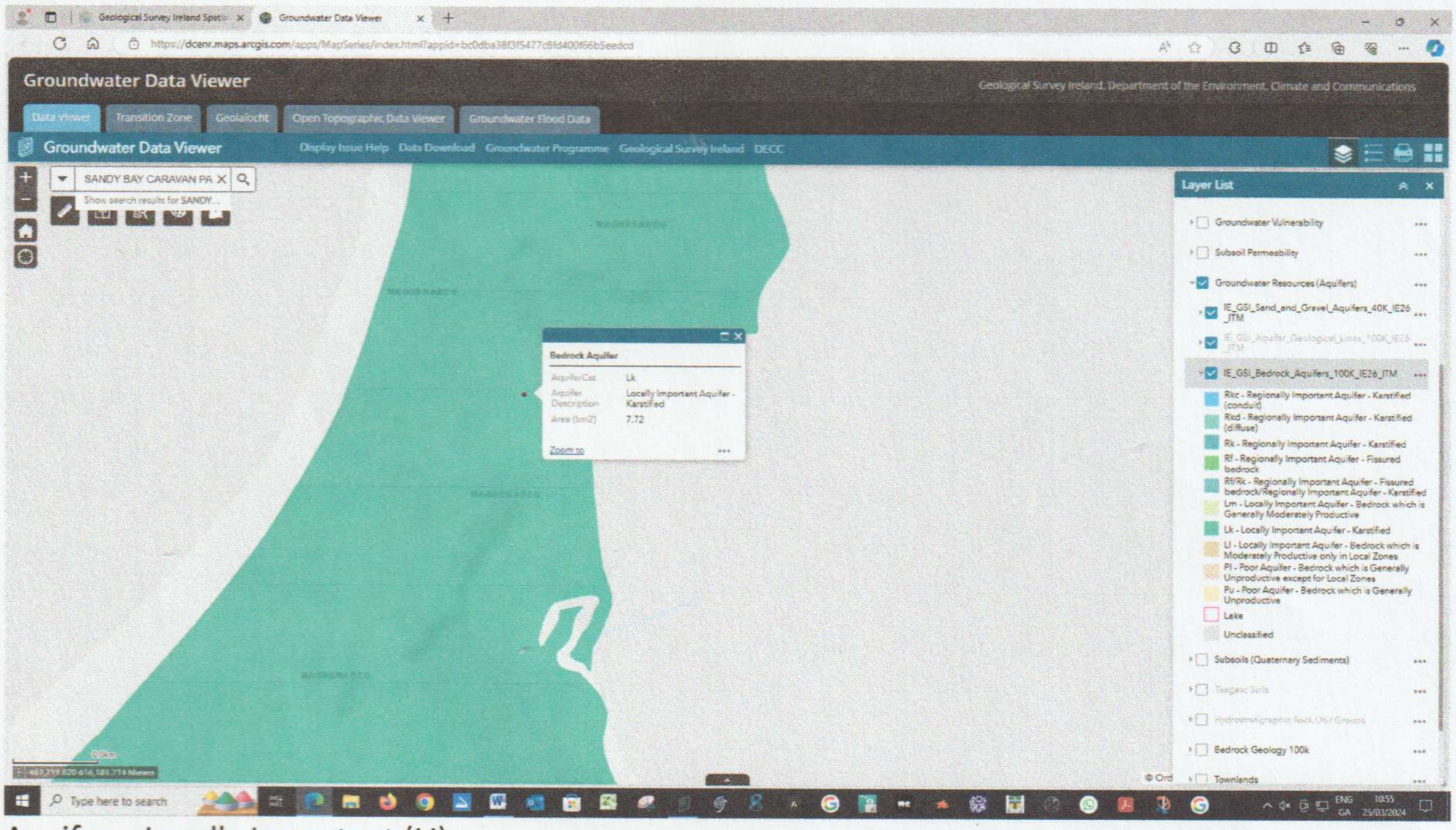
Source Protection Area : SI – n/a, SO – n/a.



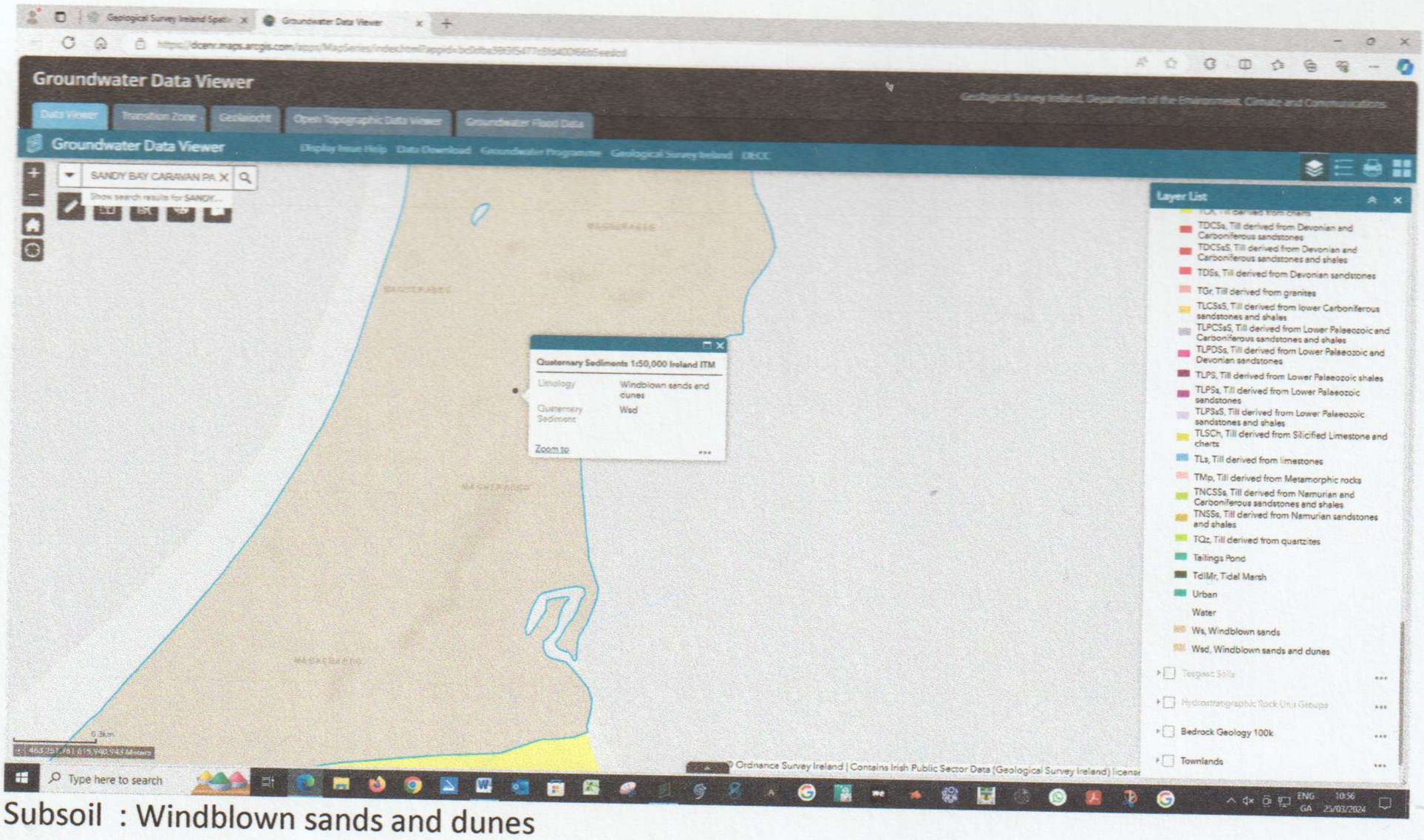
Groundwater Body Name : Brandon Head



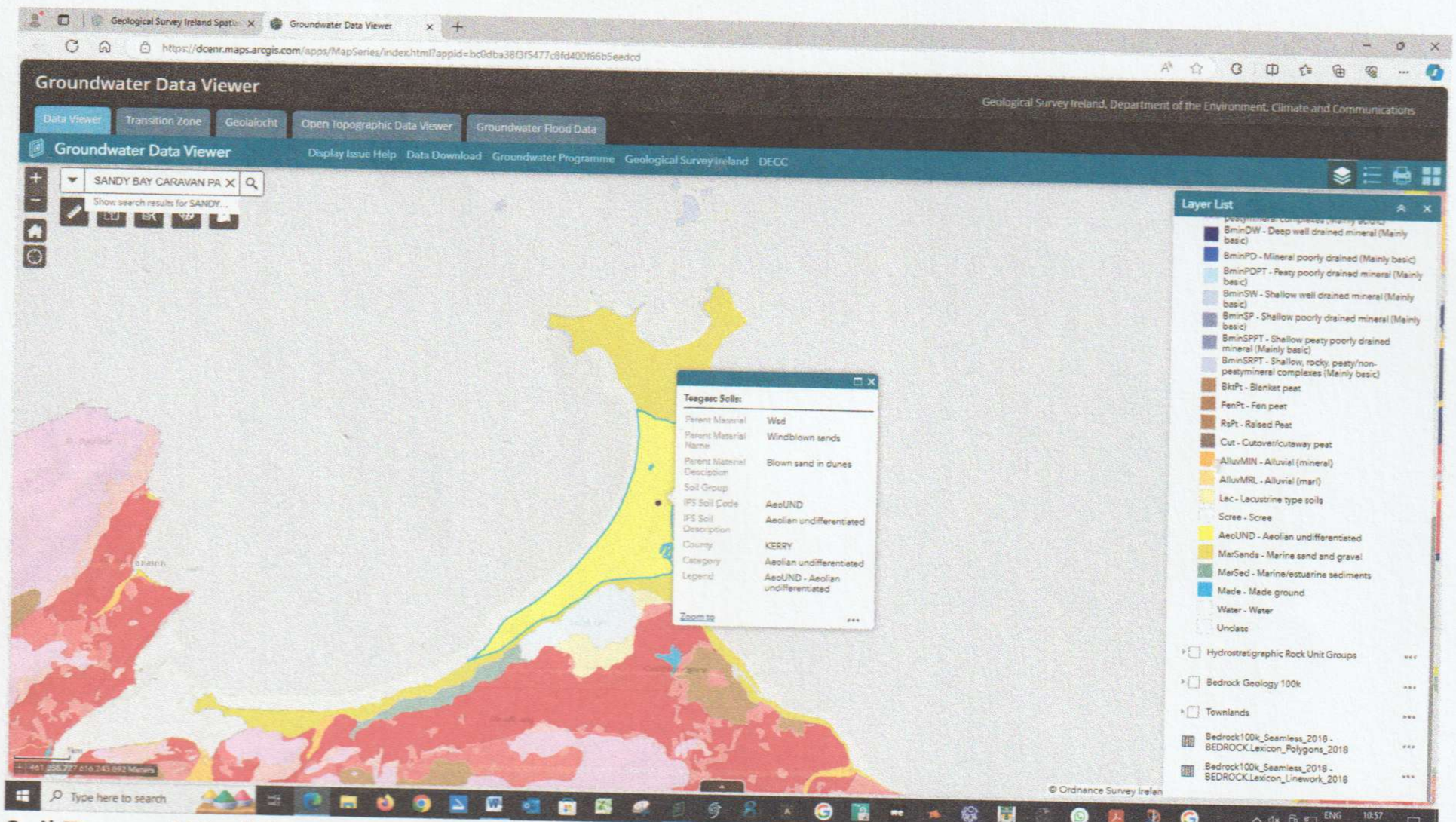
Vulnerability : High



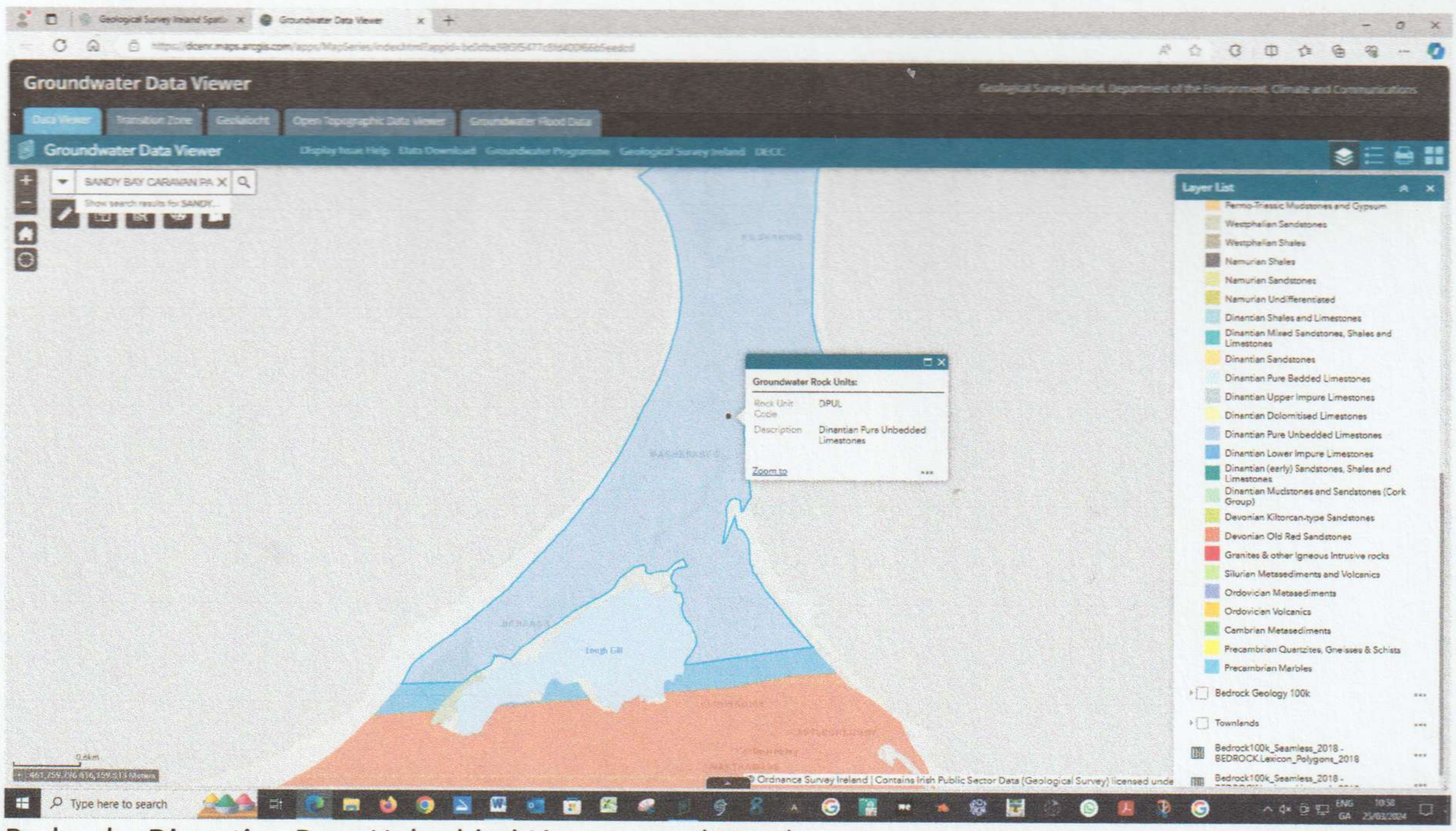
Aquifer : Locally Important (LI)



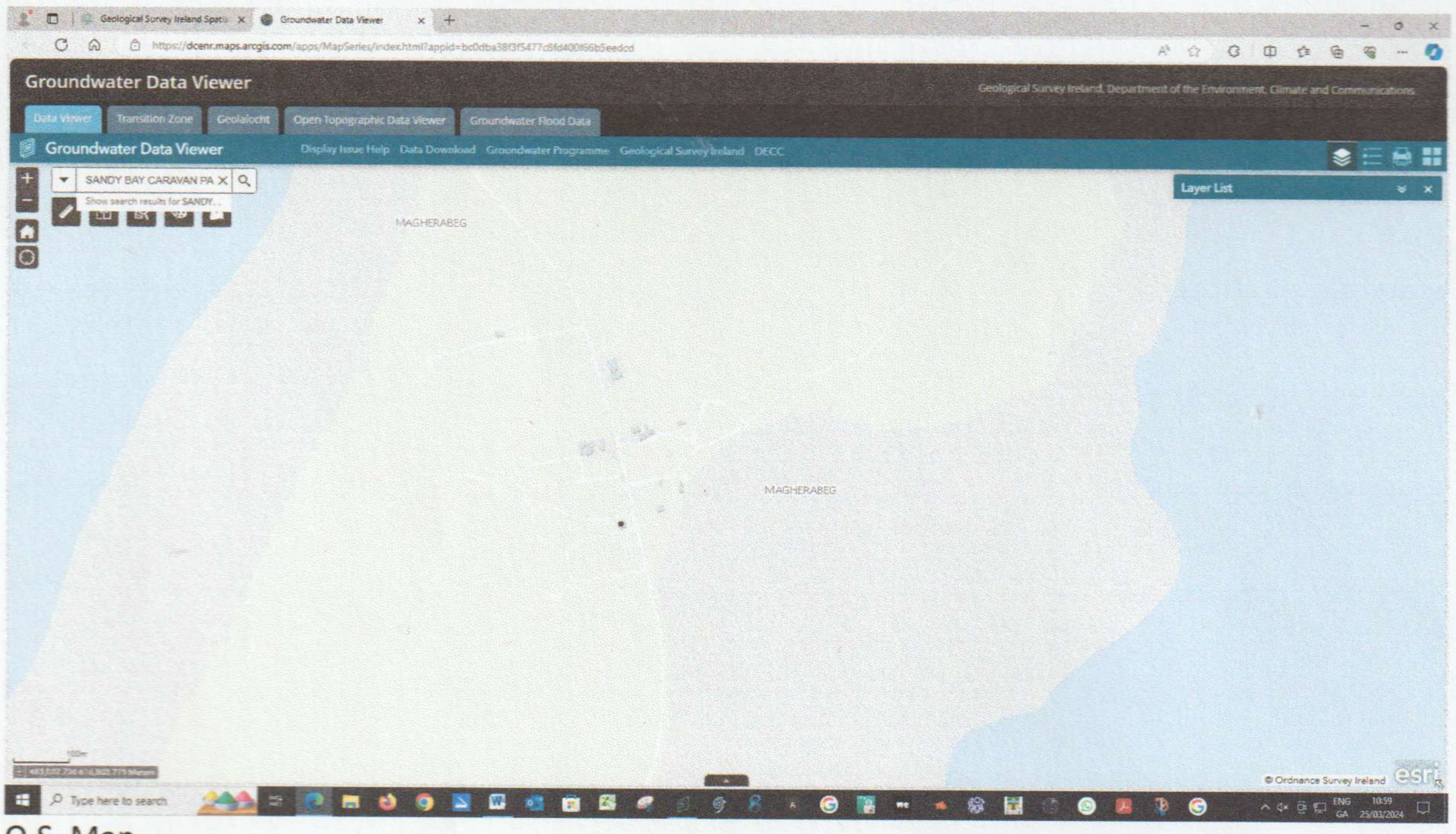
Subsoil : Windblown sands and dunes



Soil Type : Windblown sands (Wsd) (Soil Code : AeoUND)

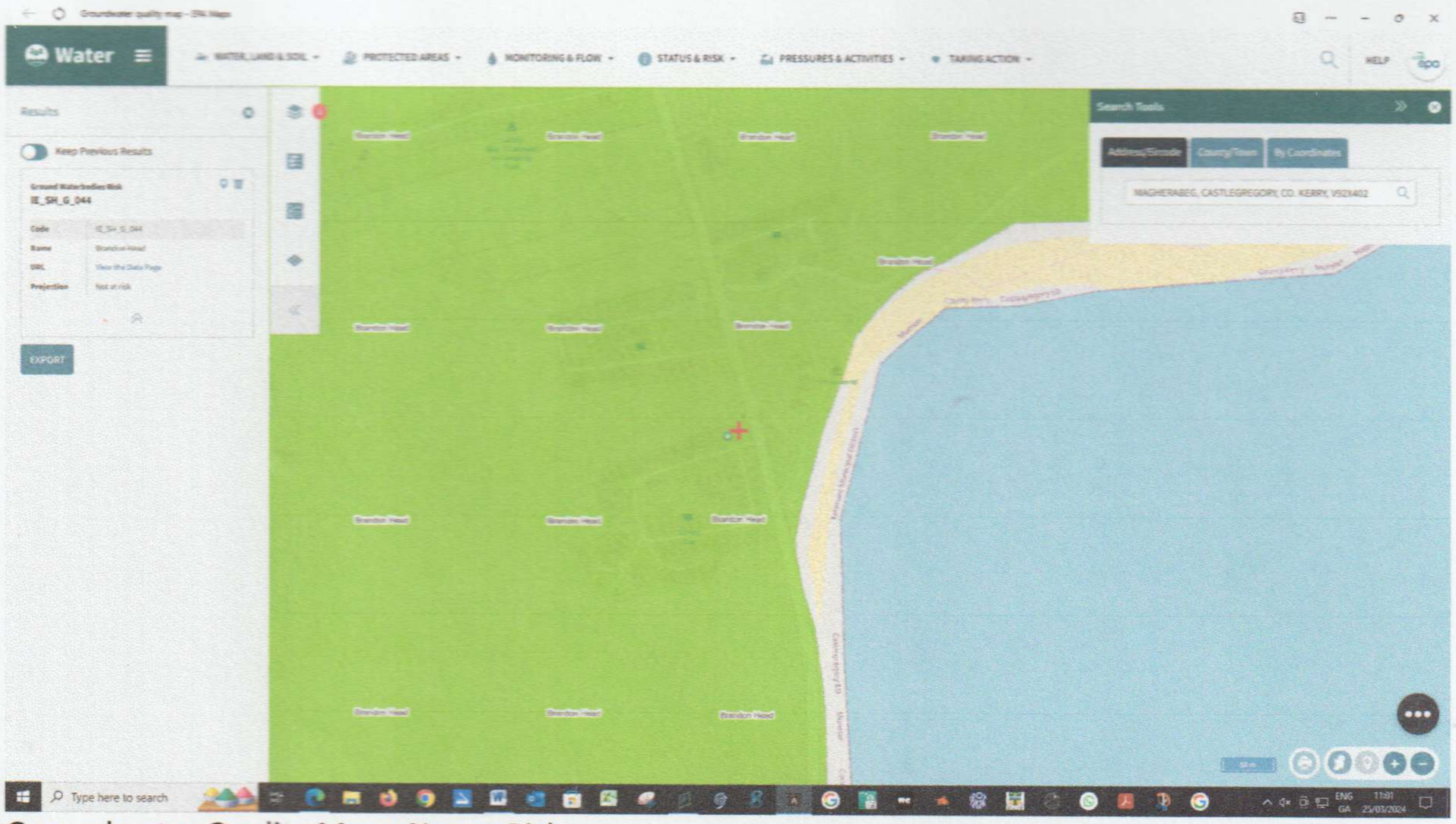


Bedrock : Dinantian Pure Unbedded Limestones (DPUL)



O.S. Map

G.P.R. is R2[1]



Groundwater Quality Map : Not at Risk

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment

Landscape Position: Almost flat site, with some minor bumps and humps

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

Slope Comment: 0.7m over 45m approx in zone

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

Houses:

Some nearby, Caravan park across road, Sports business to one side, and 9 houses within 250m

Existing Land Use:

Toilet & shower block and parking area on site at present.

Vegetation Indicators:

Grasses and plants in test area (existing green)

Groundwater Flow Direction: West to East

Ground Condition:

Mostly firm during testing (wet weather)

Site Boundaries:

2 x fences, 1 x coast / wall

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment (contd.)

Roads:

By road to front of site

Outcrops (Bedrock And/Or Subsoil):

None evident during testing

Surface Water Ponding:

None visible during testing in test zone (wet weather)

Lakes:

None within 150m

Beaches/Shellfish Areas:

Magherbeg beach is adjacent to site (see layout)

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:*

Existing storm water drain 22.8m to the South (see layout)

Springs:*

None evident within 100m (confirmed by client / agent)

Wells:*

None evident within 100m (confirmed by client / agent)

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).

Magherbeg Beach is adjacent to site
Existing storm water drain 22.8m to the South (see layout)
E.P.A set back distances will be achieved with our proposal

***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): 2.85

Depth from ground surface to bedrock (m) (if present): 2.85

Depth from ground surface to water table (m) (if present): 1.6

Depth of water ingress: 1.6

Rock type (if present): Bedrock encountered at 2.85m deep in this location

Date and time of excavation: 25-Mar-2024 09:12

Date and time of examination: 27-Mar-2024 11:33

Depth of Surface and Subsurface Percolation Tests	Soil/Subsoil Texture & Classification**	Plasticity and dilatancy***	Soil Structure	Density/ Compactness	Colour****	Preferential flowpaths
0.1 m	SAND	0 Threads 5 mm Ribbons Dilatant	Granular	Low (uncompact)	Brown	Roots and Small stones
0.2 m						
0.3 m						
0.4 m P						
0.5 m						
0.6 m						
0.7 m						
0.8 m t						
0.9 m						
1.0 m						
1.1 m						
1.2 m						
1.3 m						
1.4 m						
1.5 m						
1.6 m WT	Water Table 1.6m					
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	Bedrock 2.85m					
2.9 m BR						
3.0 m						
3.1 m						
3.2 m						
3.3 m						
3.4 m						
3.5 m						

Likely Subsurface Percolation Value: 20

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.

BS5930 Tests (TH)

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SAND

0 threads	0 threads	0 threads
6mm ribbons	5mm ribbons	4mm ribbons
Dilatant	dilatant	dilatant

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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): 2.85

Depth from ground surface to bedrock (m) (if present): 2.85

Depth from ground surface to water table (m) (if present): 1.4

Depth of water ingress: 1.4

Rock type (if present): Bedrock encountered at 2.85m deep in this location

Date and time of excavation: 25-Mar-2024 11:52

Date and time of examination: 27-Mar-2024 12:42

Depth of Surface and Subsurface Percolation Tests	Soil/Subsoil Texture & Classification**	Plasticity and dilatancy***	Soil Structure	Density/ Compactness	Colour****	Preferential flowpaths
0.1 m	SAND	0 Threads 6 mm Ribbons Dilatant	Granular	Low (uncompact)	Brown	Roots and Small stones
0.2 m						
0.3 m						
0.4 m P						
0.5 m						
0.6 m						
0.7 m						
0.8 m t						
0.9 m						
1.0 m						
1.1 m						
1.2 m						
1.3 m						
1.4 m WT	Water Table 1.4m					
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 BR	Bedrock 2.8m					
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: 20

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.

BS5930 Tests (TH)

SAND		
0 threads	0 threads	0 threads
7mm ribbons	6mm ribbons	5mm ribbons
Dilatant	dilatant	dilatant

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T & P Tests

Set 1

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3.2 Trial Hole (contd.) Evaluation:

This type of soil should be able to treat wastewater

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)	320	320	320
Depth from ground surface to base of hole (mm) (B)	720	720	720
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

		1	2	3
Pre-soak start	Date	25-Mar-2024	25-Mar-2024	25-Mar-2024
	Time	10:20	10:21	10:22
2nd pre-soak start	Date	25-Mar-2024	25-Mar-2024	25-Mar-2024
	Time	16:07	16:08	16:09

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	26-03-2024	26-03-2024	26-03-2024
Time filled to 400 mm	09:30	09:31	09:32
Time water level at 300 mm	10:02	10:03	10:04
Time (min.) to drop 100 mm (T_{100})	32.00	32.00	32.00
Average T_{100}			32.00

If T_{100} > 480 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)

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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	10:02	10:43	41.00	10:03	10:45	42.00	10:04	10:47	43.00
2	10:44	11:29	45.00	10:46	11:31	45.00	10:48	11:33	45.00
3	11:30	12:25	55.00	11:32	12:27	55.00	11:34	12:29	55.00
Average Δt Value			47.00			47.33			47.67
	Average Δt/4 = [Hole No.1]		11.75 (t_1)	Average Δt/4 = [Hole No.2]		11.83 (t_2)	Average Δt/4 = [Hole No.3]		11.92 (t_3)

Result of Test: Subsurface Percolation Value = 11.83 (min/25 mm)

Comments:

This is an acceptable T value in the subsoil layer.

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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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 Tim§e hh:mm	Time of fall (mins) = T_m	K_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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

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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	25-Mar-2024	25-Mar-2024	25-Mar-2024
	Time	10:26	10:27	10:28
2nd pre-soak start	Date	25-Mar-2024	25-Mar-2024	25-Mar-2024
	Time	16:10	16:11	16:12

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	26-Mar-24	26-Mar-24	26-Mar-2024
Time filled to 400 mm	09:36	09:37	09:38
Time water level at 300 mm	10:08	10:09	10:10
Time to drop 100 mm (T_{100})	32.00	32.00	32.00
Average T_{100}			32.00

If T_{100} > 480 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)

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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	10:08	10:55	47.00	10:09	10:57	48.00	10:10	10:59	49.00
2	10:56	11:45	49.00	10:58	11:47	49.00	11:00	11:49	49.00
3	11:46	12:36	50.00	11:48	12:38	50.00	11:50	12:40	50.00
Average ΔT Value			48.67			49.00			49.33
	Average ΔT/4 = [Hole No.1]		12.17 (T_1)	Average ΔT/4 = [Hole No.2]		12.25 (T_2)	Average ΔT/4 = [Hole No.3]		12.33 (T_3)

Result of Test: Surface Percolation Value = 12.25 (min/25 mm)

Comments:

This is an acceptable P value in this layer

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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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: Surface Percolation Value =

0.00 (min/25 mm)

Comments:

T & P Tests

Set 2

3.2 Trial Hole (contd.) Evaluation:

Uphill / Downhill
This type of soil should be able to treat wastewater

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)	320	320	320
Depth from ground surface to base of hole (mm) (B)	720	720	720
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

		1	2	3
Pre-soak start	Date	25-Mar-2024	25-Mar-2024	25-Mar-2024
	Time	10:29	10:30	10:31
2nd pre-soak start	Date	25-Mar-2024	25-Mar-2024	25-Mar-2024
	Time	16:13	16:14	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	26-03-2024	26-03-2024	26-03-2024
Time filled to 400 mm	09:33	09:34	09:35
Time water level at 300 mm	10:05	10:06	10:07
Time (min.) to drop 100 mm (T_{100})	32.00	32.00	32.00
Average T_{100}			32.00

If T_{100} > 480 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)

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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	10:05	10:49	44.00	10:06	10:51	45.00	10:07	10:53	46.00
2	10:50	11:35	45.00	10:52	11:37	45.00	10:54	11:40	46.00
3	11:36	12:30	54.00	11:38	12:33	55.00	11:40	12:35	55.00
Average Δt Value			47.67			48.33			49.00
	Average Δt/4 = [Hole No.1]		11.92 (t_1)	Average Δt/4 = [Hole No.2]		12.08 (t_2)	Average Δt/4 = [Hole No.3]		12.25 (t_3)

Result of Test: Subsurface Percolation Value = 12.08 (min/25 mm)

Comments:

This is an acceptable T value in the subsoil layer.

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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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 Tim§e hh:mm	Time of fall (mins) = T_m	K_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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:

This is an acceptable T value in the subsoil layer.

3.3(b) Surface Percolation Test for Soil

24

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	25-Mar-2024	25-Mar-2024	25-Mar-2024
	Time	10:32	10:33	10:34
2nd pre-soak start	Date	25-Mar-2024	25-Mar-2024	25-Mar-2024
	Time	16:17	16:18	16:19

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	26-Mar-24	26-Mar-24	26-Mar-2024
Time filled to 400 mm	09:39	09:40	09:41
Time water level at 300 mm	10:11	10:12	10:13
Time to drop 100 mm (T_{100})	32.00	32.00	32.00
Average T_{100}			32.00

If T_{100} > 480 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)

25

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	10:11	11:01	50.00	10:12	11:03	51.00	10:13	11:05	52.00
2	11:02	11:52	50.00	11:04	11:55	51.00	11:06	11:58	52.00
3	11:52	12:43	51.00	11:55	12:47	52.00	11:58	12:51	53.00
Average ΔT Value			50.33			51.33			52.33
	Average ΔT/4 = [Hole No.1]		12.58 (T_1)	Average ΔT/4 = [Hole No.2]		12.83 (T_2)	Average ΔT/4 = [Hole No.3]		13.08 (T_3)

Result of Test: Surface Percolation Value = 12.83 (min/25 mm)

Comments:

This is an acceptable P value in this layer

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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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_{fs} = T_f / T_m	T – Value = 4.45 / K_{fs}
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: Surface Percolation Value =

0.00 (min/25 mm)

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:	0.7m in 45m
Are all minimum separation distances met? (upgrade)	X
Depth of unsaturated soil and/or subsoil beneath invert of gravel (or drip tubing in the case of drip dispersal system)	0.90

Percolation test result: Surface: 12.83 Sub-surface: 12.08

Not Suitable for Development ☐ **Suitable for Development** ☑

NB - as upgrade.

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)** — No
3. Tertiary Treatment System and Infiltration / treatment area **(Section 10.2)** — Yes

Discharge Route [1]

Discharge to Groundwater

5.0 SELECTED DWWTS

Propose to install: Tertiary Treatment System and Infiltration /treatment area

and discharge to: Ground Water

Invert level of the trench/bed gravel or drip tubing (m) 3.65

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

This system should be built and located as shown on the attached planning drawings: Key Levels:
Inlet into Malloy Chieftan M.A.U. is 3.350m (approx) Inlet into Ecoflo modules is 4.633m (approx)
Top of distribution stone is 3.953m (approx) Trench invert level is 3.653m (approx)
Contact OSC prior to construction. all relevant issues must be re-verified prior to installation. All works must be in strict compliance with E.P.A C.O.P guidelines and K.C.C. conditions. Layout & levels supplied by client & agent. Prior to commencement of installation a qualified engineer must determine and instruct the installer regarding issues such as if a retaining wall is required for the polishing filter. etc. We are not liable for any issues that arise with upgrades of old in situ systems being done to improve the situation while not fully E.P.A. compliant. Responsibility for this rests with the client. Clients and their agents are responsible for information supplied to us such as flood plain verification, well location, drains, local features identification etc. We asked about these issues during testing. All pipework and equipment being used in this system is the responsibility of the client and their installer to ensure that they are fit for purpose and not carrying roof water and surface water. Clients must ensure that all products used in this system are properly certified and correctly sized. Suppliers instructions should be read and followed.

[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	5.6	1.3	4.633

Packaged Secondary Treatment Systems receiving raw wastewater (Chapter 9)

Type: Malloy Chieftan

Capacity PE: 30

Sizing of Primary Compartment: ____ m^3

Polishing Filter*: (Section 10.1)

Surface Area (m^2)*: 120.01

Option 1 - Direct Discharge
Surface area (m^2):

Option 2 - Pumped Discharge
Surface area (m^2):

Option 3 - Gravity Discharge
Trench length (m):

Option 4 - Low Pressure Pipe Distribution
Trench length (m):

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
To treat the effluent from the facility to a better standard.	As per suppliers P.I.A cert (attached)	As per table 10.1 in E.P.A. manual 2021 .

DISCHARGE ROUTE:

Groundwater ✓ Hydraulic Loading Rate * ($l/m^2.d$): ____ Surface area (m^2): 120.01

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

System install to be overseen and certified as correct by a qualified and insured engineer. E.P.A guidelines to be adhered to.
Equipment must be commissioned.
Kerry County Council and E.P.A. conditions to be complied with.

On-going Maintenance

Service contract to be taken out for the equipment.
Regular clean out of unit, as per supplier advice.

7.0 SITE ASSESSOR DETAILS

Company: O.S.C

Prefix: Mr First Name: Tim Surname: O'Sullivan

Address: Rossanean, Currow, Killarney. Co. Kerry

Qualifications/Experience: F.E.T.A.C. S.S.A.C

Date of Report: 01-Apr-2024

Phone: 0876858993 E-mail tim@osullivanconsulting.ie

Indemnity Insurance Number: PSL0739668459

Signature: T. O'Sullivan

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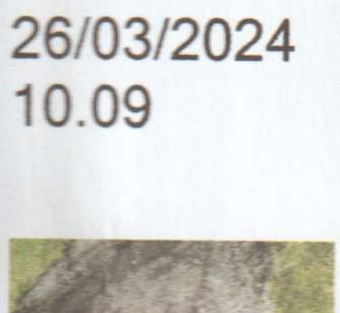

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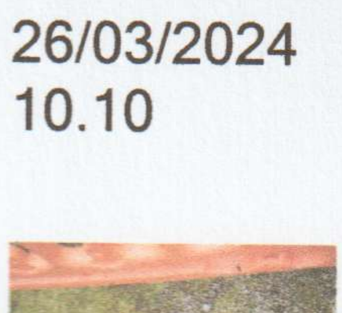

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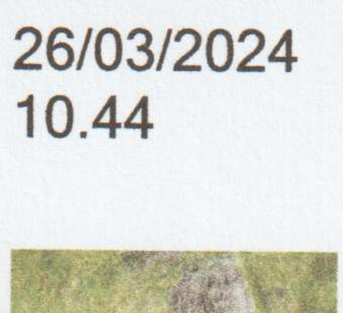

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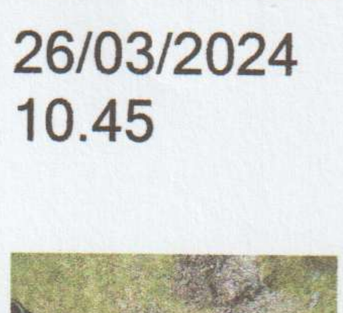

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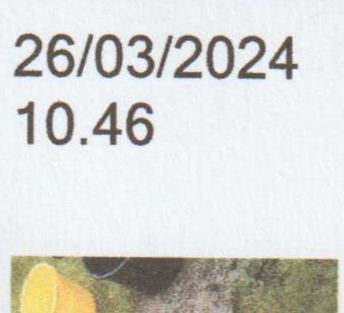

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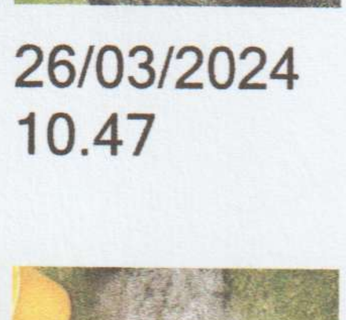

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Notes:

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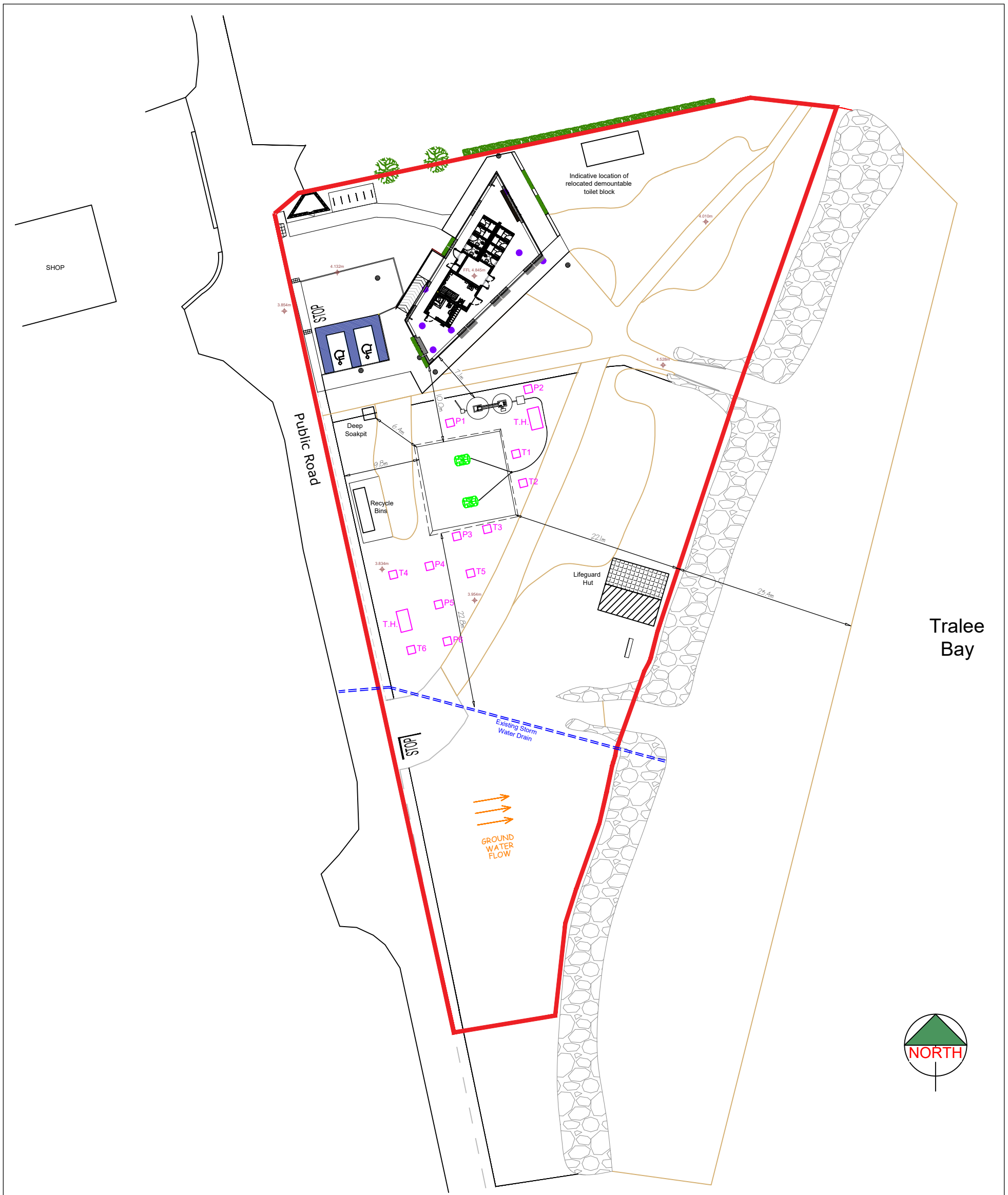
4) All work to be carried out in accordance with EPA Code of Practice Guidlines.
5) All plant operaters should check for and locate any existing on-site services prior to work commencing.
6) OSC is not responsible for ground conditions or existing pipe work (which should be checked) on already developed sites.
7) On sloped sites it is necessary for the client to consult an engineer to determine if a Retaining Wall is required.
8) It is vital that the supervising engineer ensures that the trench invert level is below the iron pan (if present).
9) This office has not been advised of any issues resulting or relating to a flood plain.
10) OSC is not liable for upgraded systems on existing unsuitable sites, such as this one.



Site Layout Map

Scale: 1 in 500

Client(s): Kerry County Council		Proposed upgrade of Wastewater Treatment System for Public Toilet/Showers at Maherabeg, Castlegregory, Co. Kerry	O'Sullivan Consulting Rossaneen, Currow, Killarney, Co. Kerry Telephone/Fax: (066) 9793931 Email: info@osullivanconsulting.ie Website: www.osulivanconsulting.ie
Date: April 2024	Scale: As Indicated		
Drawing No: OSC/KCC - PS/03/2024	Rev. A		

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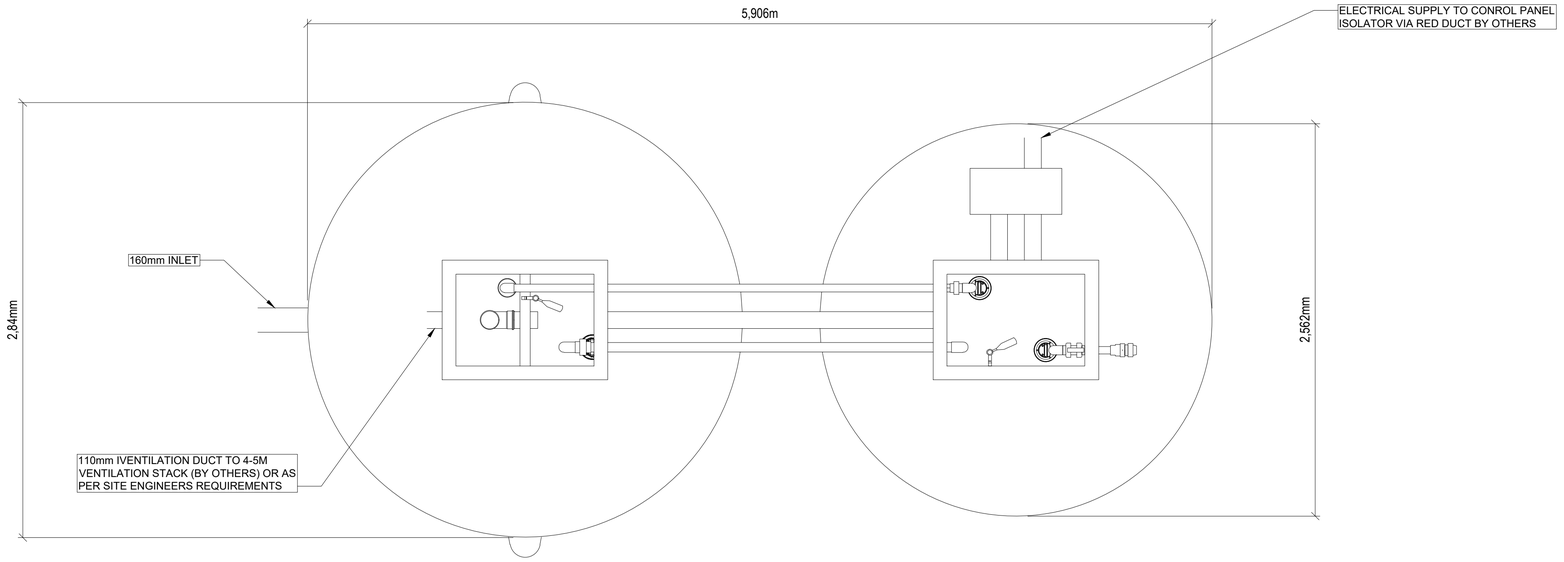
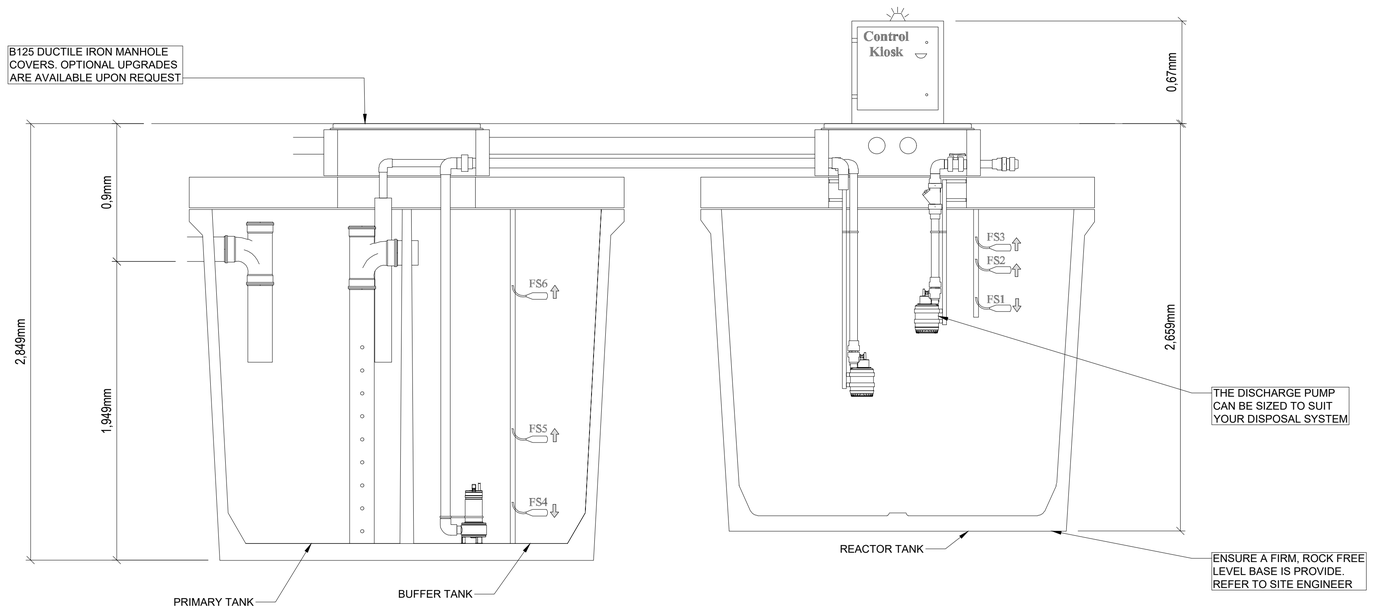


PLAN VIEW - WASTEWATER TREATMENT SYSTEM

SCALE: 1:20



SECTION - WASTEWATER TREATMENT SYSTEM

SCALE: 1:20

NOTES:

1. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, BILLS OF QUANTITIES, ARCHITECTURAL, SERVICES AND ENGINEERING DRAWINGS.
2. ALL LEVELS ARE IN METRES RELATED TO ORDNANCE DATUM MALIN HEAD.
3. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
4. DRAWINGS ARE NOT TO BE SCALED.
5. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS NOTED OTHERWISE.

REV	DATE	DESCRIPTION	BY	APP
P01	05/10/23	ISSUED FOR PLANNING	S.S.	I.B

PROJECT:

MAGHERABEG BEACH FACILITIES

TITLE:

SBR TREATMENT SYSTEM DETAILS

CLIENT:

MWP
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
CORK | TRALEE | LONDON | LIMERICK
mwp.ie

DRAWN:	CHECKED:	APPROVED:
S.S.	A.G.	I.B.
PROJECT NUMBER:	DATE:	SCALE @ A1:
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STATUS DESCRIPTION: FOR INFORMATION		STATUS: S2
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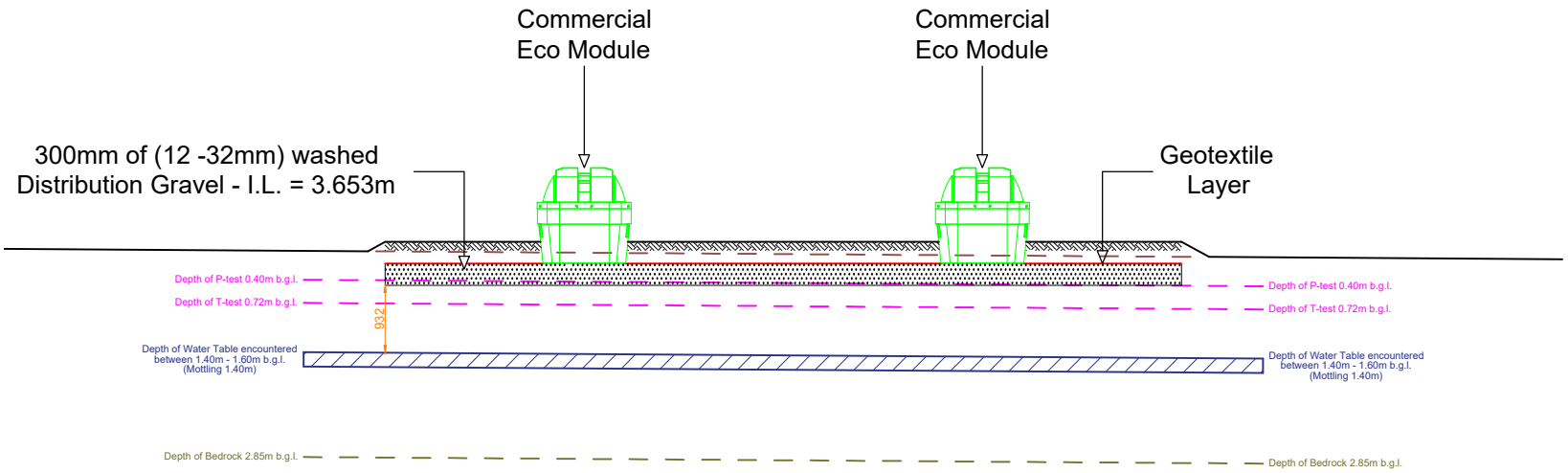
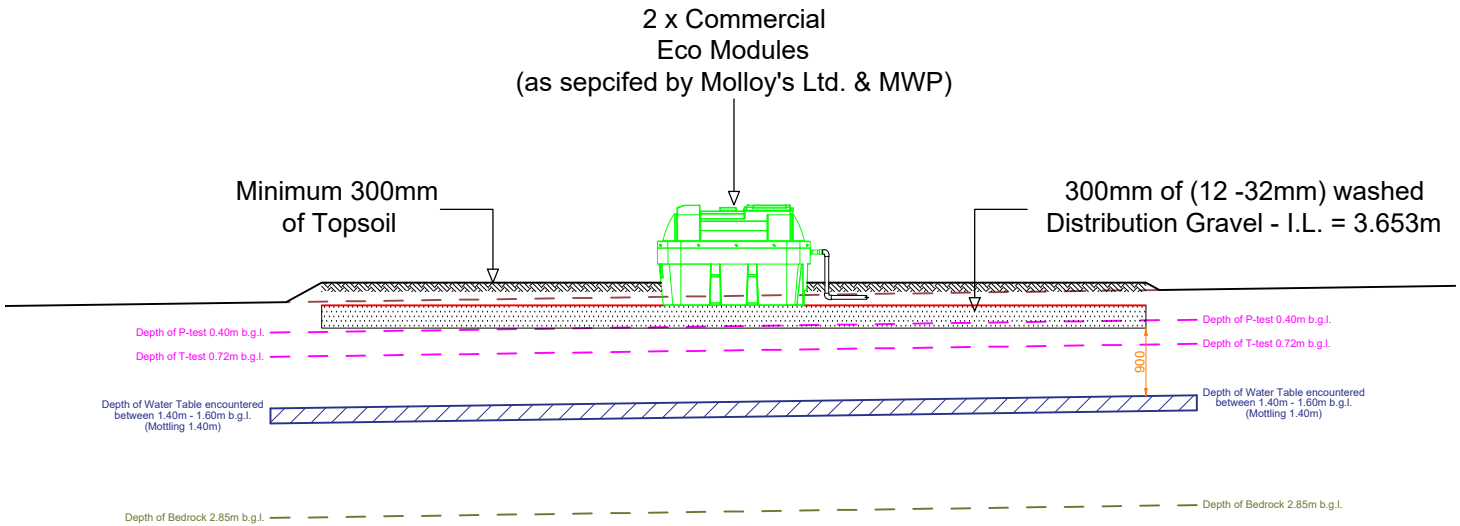


Cross Section A - A

Scale: 1 in 100



Cross Section B - B

Scale: 1 in 100

Client(s): Kerry County Council		Proposed upgrade of Wastewater Treatment System for Public Toilet/Showers at Maherabeg, Castlegregory, Co. Kerry	O'Sullivan Consulting Rossaneen, Currow, Killarney, Co. Kerry Telephone/Fax: (066) 9793931 Email: info@osullivanconsulting.ie Website: www.osullivanconsulting.ie
Date: April 2024	Scale: As Indicated		
Drawing No: OSC/KCC - PS/01/2024	Rev. A		

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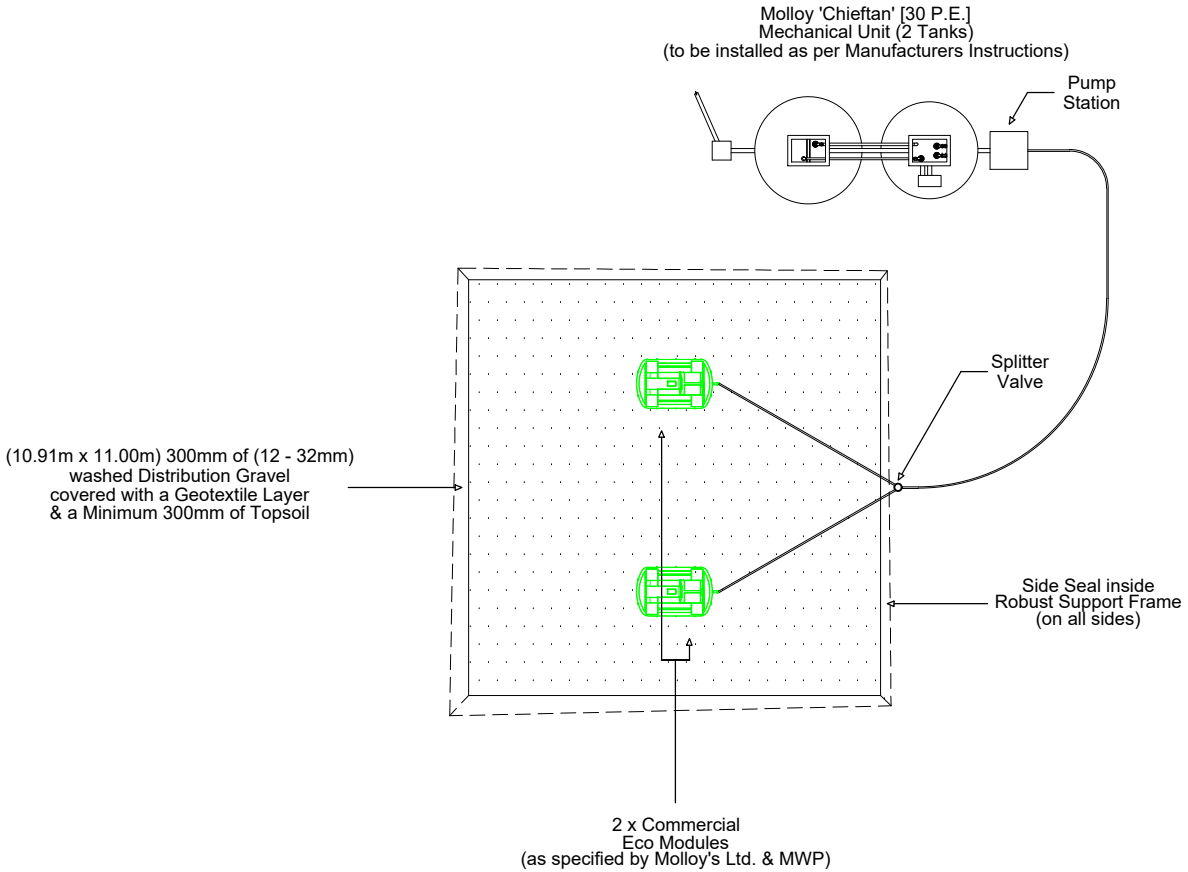
9) This office has not been advised of any issues resulting or relating to a flood plain.
10) OSC is not liable for upgraded systems on existing unsuitable sites, such as this one.



Plan of Proposed System

Scale: 1 in 200

Usage confirmed by the Local Authority & their Agent

I.L. of Pipe into Molloy Chieftan M.A.U. = 3.350m or thereabouts

I.L. of pipe into Commercial Eco Modules = 4.633m or thereabouts

Client(s): Kerry County Council		Proposed upgrade of Wastewater Treatment System for Public Toilet/Showers at Maherabeg, Castlegregory, Co. Kerry	O'Sullivan Consulting Rossaneen, Currow, Killarney, Co. Kerry Telephone/Fax: (066) 9793931 Email: info@osullivanconsulting.ie Website: www.osullivanconsulting.ie
Date: April 2024	Scale: As Indicated		
Drawing No: OSC/KCC - PS/02/2024	Rev. A		

Notes:
1) Please contact O'Sullivan Consulting prior to the construction of this waste-water treatment system.
2) Levels and Site Layout Map provided by the clients Planning Agent.
3) These drawings have been prepared for the purposes of making a planning application only.
4) All work to be carried out in accordance with EPA Code of Practice Guidlines.
5) All plant operaters should check for and locate any existing on-site services prior to work commencing.
6) OSC is not responsible for ground conditions or existing pipe work (which should be checked) on already developed sites.
7) On sloped sites it is necessary for the client to consult an engineer to determine if a Retaining Wall is required.
8) It is vital that the supervising engineer ensures that the trench invert level is below the iron pan (if present).
9) This office has not been advised of any issues resulting or relating to a flood plain.
10) OSC is not liable for upgraded systems on existing unsuitable sites, such as this one.