Submit Form

SITE CHARACTERISATION FORM
COMPLETING THE FORM

Step 1:

Clear Form

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

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 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 B: SITE CHARACTERISATION FORM

File Reference:

1.0 GENERAL DETAILS (From planning application)

Prefix: First Name: Dunlavin Land Restoration Ltd Surname:

Address:

Site Location and Townland:
Usk, Co. Kildare
Quarry land fill - Proposed 2 site staff - max 4 staff plus drivers

Telephone No: Fax No:

E-Mail:

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

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

2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type): Glacio Fluvial sands & gravels

Aquifer Category: Regionally Important ☐ Locally Important ☐ Poor PI

Vulnerability: Extreme ☐ High ✔ Moderate ☐ Low ☐ High to Low ☐ Unknown ☐

Bedrock Type: Silurian Metasediments & volcanics

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

Groundwater Protection Scheme (Y/N): Yes Source Protection Area: SI ☐ SO ☐

Groundwater Protection Response: R1

Presence of Significant Sites (Archaeological, Natural & Historical): Existing sand & gravel quarry - proposed to landfill

Past experience in the area: Generally good soakage in the area

Comments:

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

Groundwater is a target

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: Undulating

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: House to the North >100m, Shed W>100m, Barn S>150m

Existing Land Use: Sand & gravel Quarry

Vegetation Indicators: No soakage indicators noted

Groundwater Flow Direction: Likey W to E

Ground Condition: Firm underfoot (hard surface area)

Site Boundaries: Occasional trees, hedging and some fencing

Roads: Minor road passes the front of the site

Outcrops (Bedrock And/Or Subsoil): None noted

Surface Water Ponding: Patches on the hard surface area Lakes: Pond formed in base of quarry pit

Beaches/Shellfish: None within 1km Areas/Wetlands: None within 200m

Karst Features: None noted

Watercourse/Stream*: None within 150m

Drainage Ditches*: None around the site

Springs / Wells*: None within 100m

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

The pond is a target but is not naturally formed and would be filled in as part of the proposed land fill - therefore is not a target.

No other targets noted.

***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): 2.10

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: 17/12/2019

Date and time of examination: 17/12/2019

	Depth of P/T Test*	Soil/Subsoil Texture & Classification**	Plasticity and dilatancy***	Soil Structure	Density/ Compactness	Colour****	Preferential flowpaths
0.1 m		Hardcore Surface 0-0.3m			Hard core	Grey	Random
0.2 m							
0.3 m							
0.4 m		Filled ground sandy gravelly SILT/CLAY 0.3-0.7m		Blocky / Massive	Firm	Brown	Random
0.5 m							
0.6 m							
0.7 m							
0.8 m		very sandy very gravelly SILT with cobbles & occasional boulders 0.7-2.1m	Threads 0 Ribbons 20mm Dilates with ease	Blocky	Firm - loose when disturbed	Grey	Random
0.9 m							
1.0 m							
1.1 m							
1.2 m							
1.3 m							
1.4 m							
1.5 m							
1.6 m							
1.7 m							
1.8 m							
1.9 m							
2.0 m							
2.1 m							
2.2 m		End of pit at 2.1m					
2.3 m							
2.4 m							
2.5 m							
2.6 m							
2.7 m							
2.8 m							
2.9 m							
3.0 m							

Likely T value:

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.

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

Neither groundwater or bedrock encountered at 2.1m
No seepage or mottling noted on the pit walls.
Groundwater is not a target.

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)	800	700	700
Depth from ground surface to base of hole (mm) (B)	1,200	1,100	1,100
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

Date and Time pre-soaking started	17/12/2019		17/12/2019		17/12/2019	

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	17/12/2019	17/12/2019	17/12/2019
Time filled to 400 mm	11:16	11:24	11:27
Time water level at 300 mm	11:17	11:27	11:29
Time to drop 100 mm (T_{100})	1.00	3.00	2.00
Average T_{100}			2.00

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	11:17	11:18	1.00	11:27	11:31	4.00	11:29	11:32	3.00
2			0.00			0.00			0.00
3			0.00			0.00			0.00
Average Δt Value			0.33			1.33			1.00
	Average Δt/4 = [Hole No.1]		0.08 (t_1)	Average Δt/4 = [Hole No.2]		0.33 (t_2)	Average Δt/4 = [Hole No.3]		0.25 (t_3)

Result of Test: T = 0.22 (min/25 mm)

Comments:

Percolation rate to fast - refer to section 5 Recommendations below

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)			
Depth of hole (mm)	0	0	0
Dimensions of hole [length x breadth (mm)]	x	x	x

Step 2: Pre-Soaking Test Holes

Date and Time pre-soaking started					

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 P-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;

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

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δp (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δp (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δp (min)
1			0.00			0.00			0.00
2			0.00			0.00			0.00
3			0.00			0.00			0.00
Average Δp Value			0.00			0.00			0.00
	Average Δp/4 = [Hole No.1]		0.00 (p_1)	Average Δp/4 = [Hole No.2]		0.00 (p_2)	Average Δp/4 = [Hole No.3]		0.00 (p_3)

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

Comments:

No P-tests - hardcore surface from 0-0.3 / 0.4m
Refer to section 5 Recommendations below

Step 5: Modified Method (where $P_{100} > 210$ 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	P – Value = 4.45 / K_{fs}	Time Factor = T_f	Time of fall (mins) = T_m	K_{fs} = T_f / T_m	P – Value = 4.45 / K_{fs}	Time Factor = T_f	Time of fall (mins) = T_m	K_{fs} = T_f / T_m	P – 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 P- Value	P- Value Hole 1= (p_1)			0.00	P- Value Hole 1= (p_2)			0.00	P- Value Hole 1= (p_3)			0.00

Result of Test: P = 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, bedrock.
3. North point should always be included.
4. (a) 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. Cross sectional drawing of the site and the proposed layout[1] should be submitted.
6. Photographs of the trial hole, test holes and site (date and time referenced).

[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.

Not Suitable for Development ☐

Suitable for [1]		**Discharge Route**
1. Septic tank system (septic tank and percolation area)	No	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): 0.50

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

Based on the site assessment and percolation test results the site is considered suitable for an on-site sewage system subject to the following site improvement works and subject to approval by the County Council:

Although the proposed usage of the system is low i.e. 2 to 4 staff with occasional usage by lorry drivers due to the very fast soakage observed in the T-tests it is recommended to install a sewage treatment plant in conjunction with a sand polishing filter overlying a soil polishing filter.

The system must be installed in accordance with the EPA Code of Practice 2009 and the EPA manual for Businesses.

NOTE:
Grey water must be discharged into the sewage system along with the foul water.
Storm Water must not be allowed enter the sewage system.
Effluent must be discharged for final treatment to a designed percolation system - Under no circumstances must effluent be discharged to a water course or ditch.

[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	15.00		
Soil	20.00		
Constructed Wetland			
Other			

Package Treatment Systems

Type: TRICEL Sewage Treatment System

Capacity PE: 6.00

Sizing of Primary Compartment

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 * ($l/m^2.d$)	60.00
Surface Water **		Discharge Rate (m^3/hr)	

TREATMENT STANDARDS:

Treatment System Performance Standard (mg/l)	BOD	SS	NH_4 - N	Total N	Total P
TRICEL Sewage Treatment Plant	95.90	95.30	56.70		

QUALITY ASSURANCE:

Installation & Commissioning	On-going Maintenance
The installation must be supervised by suitably qualified person with a Completion Report prepared to include photographic evidence on completion of works.	The system must be desludged annual or in accordance with the manufacturers instructions and serviced at least once every year by a suitably qualified person.

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

** Water Pollution Act discharge licence required

7.0 SITE ASSESSOR DETAILS

Company: Waste Water Maintenance Ltd

Prefix: Mr. First Name: Aidan Surname: Comerford

Address: PO Box 1014, Blessington Road, Naas, Co. Kildare

Qualifications/Experience: Dip. EIA/SEA Mgmt. FETAC EPA Site Assessor

Date of Report: 17/12/2019

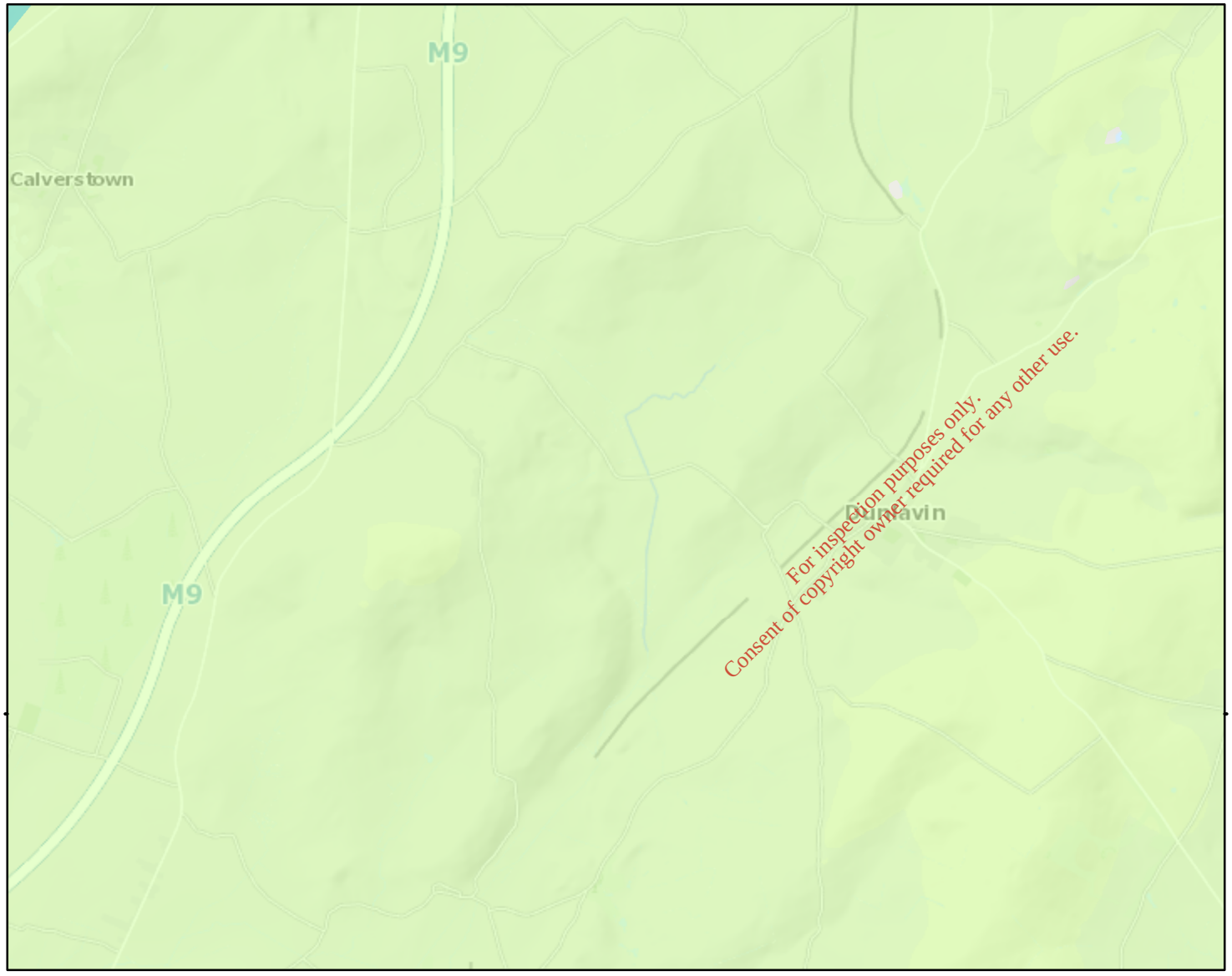
Phone: 086-6042822 Fax: e-mail

Indemnity Insurance Number: Waste Water Maintenance Ltd- Indemnity Insurance Number- Waste Water Maintenance Ltd- Indemnit

Signature: 

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Bedrock



Legend

- Dinantian (early) Sandstones, Shales and Limestones
- Silurian Metasediments and Volcanics

Scale: 1:50,000

Geological Survey Ireland

N W E S

0 0.35 0.7 1.4 mi
0 0.5 1 2 km

Map Centre Coordinates (ITM) 684,829 701,794
17/12/2019, 17:36:05

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Aquifer

Legend

- Locally important gravel aquifer
- Bedrock Aquifer Faults
- Pl - Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones
- Pu - Poor Aquifer - Bedrock which is Generally Unproductive
- Pl - Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones
- Pu - Poor Aquifer - Bedrock which is Generally Unproductive

Scale: 1:50,000

Geological Survey Ireland

N W E S

0 0.35 0.7 1.4 mi
0 0.5 1 2 km

Map Centre Coordinates (ITM) 684,829 701,794
17/12/2019, 17:24:26

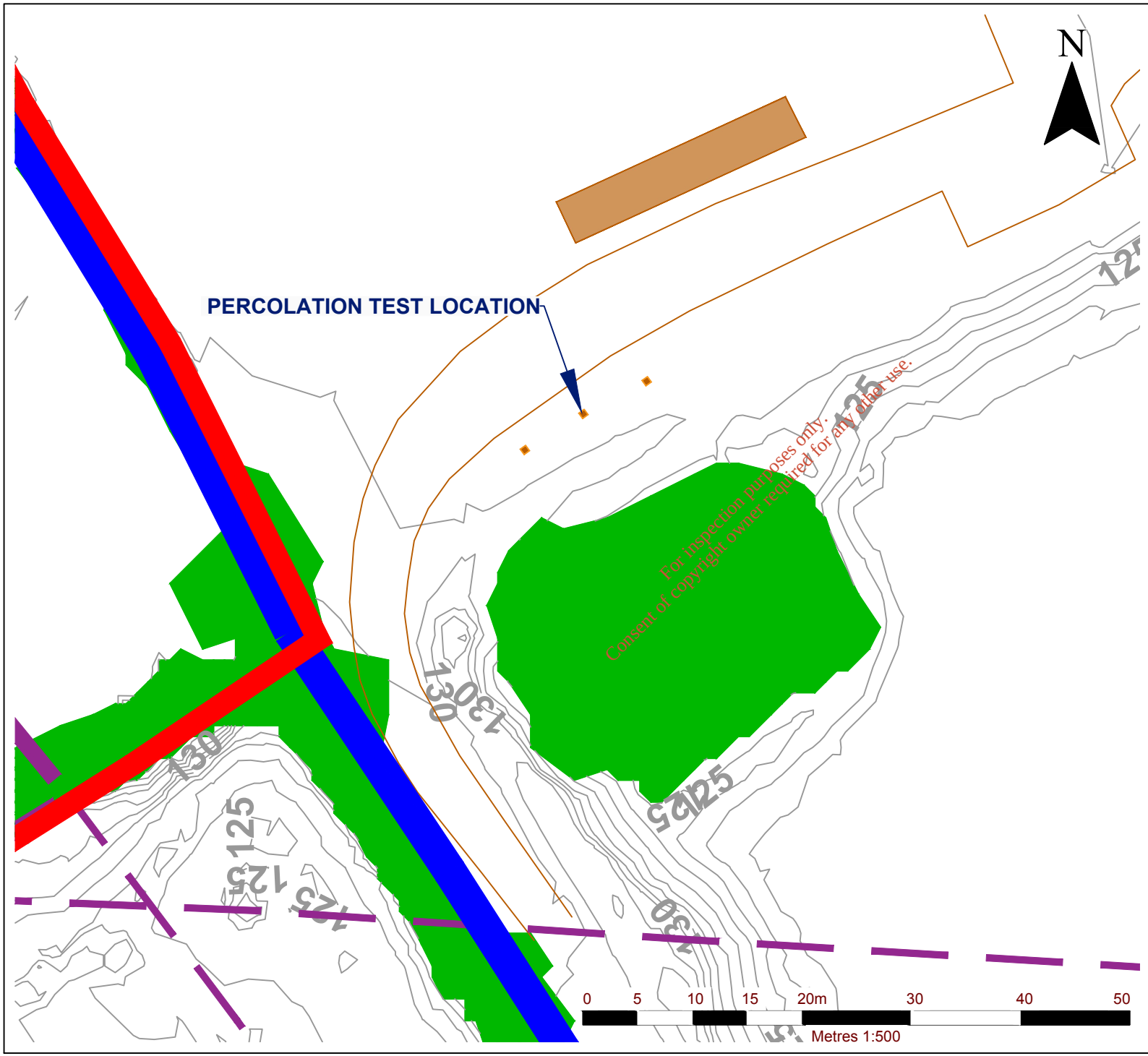
USK Co. Kildare – Application Site / Former Pit

Site Views

USK Co. Kildare – Application Site / Former Pit

T1 & 2 – Tests

T3 & Trial Hole



NOTES

1. Extract from Map Scale 1:5,000 Ordnance Survey No. 3895 & 3837

2. Ordnance Survey Ireland Licence No. SU 0000719
(c) Ordnance Survey Ireland and Government of Ireland

LEGEND

- LAND INTEREST BOUNDARY
- PLANNING APPLICATION AREA (c. 26.6 Hectares)
- SCRUB / VEGETATION
- OVERHEAD POWERLINE
- PERCOLATION TEST LOCATION

*'Orthomosaic produced from Aerial Photography flown **January 2018** by SLR Consulting Ireland (IAA Permit No. 150052) www.slrconsulting.com Tel. +353-1-2964667.*

Orthomosaic produced using Ground Control Points; Related to Irish Transverse Mercator Coordinate System and OS Malin Head Level Datum.

The accuracy of the orthomosaics and the digital elevation models (DEM) strongly depends on the flight height, lighting conditions, availability of textures, image quality, overlap, and type of terrain. Contours / 3D data relates to the surface model and not terrain levels. Typical accuracies: E: 0.05 m; N:0.05 m; Levels: 0.30 m.

All Dimensions and Levels are to be checked on site.

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DUNLAVIN LAND RESTORATION LTD.

REQUEST FOR FURTHER INFORMATION

LANDS AT USK TOWNLAND,
KILCULLEN, CO. KILDARE

SITE CHARACTERISATION REPORT
PERCOLATION TEST LOCATIONS

FIGURE A

Scale	Date
1:500 @ A4	MARCH 2020

00507.00001.USK SRF.EIAR-Fig A.Percolation Test Locations.dwg