

RECEIVED: 22/05/2023

## **APPENDIX 10**

### **LABORATORY CERTIFICATES FOR GROUNDWATER MONITORING**



RECEIVED: 22/05/2023

**ALS Laboratories (UK) Limited**  
Torrington Avenue  
Coventry  
CV4 9GU

T: +44 (0)24 7642 1213  
F: +44 (0)24 7685 6575  
www.alsenvironmental.co.uk

**Mr Breheny**  
**Envirologic**  
**Envirologic Ltd.**  
**78 St Peters Terrace**  
**Howth**  
**Dublin D13 H008**  
**South Dublin**

12 December 2022

**Test Report: COV/2407951/2022**

Dear Mr Breheny

Analysis of your sample(s) submitted on 30 November 2022 is now complete and we have pleasure in enclosing the appropriate test report(s).


An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Laboratories (UK) Limited and we look forward to receiving your next samples.

Yours Sincerely,

Signed: 

Name: P. Patel

Title: Inorganics Chemistry Manager



1314



EMS675527

OHS 542058



# Report Summary

**Mr Patrick Breheny**  
**Envirologic**  
**Envirologic Ltd.**  
**78 St Peters Terrace**  
**Howth**  
**Dublin**  
**South Dublin**  
**D13 H008**

ANALYSED BY



Date of Issue: **12 December 2022**

Report Number: **COV/2407951/2022**

Issue **1**

This issue replaces  
all previous issues

**Job Description:** Micro analysis

Number of Samples  
included in this report **2**

Job Received: **30 November 2022**

Number of Test Results  
included in this report **28**

Analysis Commenced: **02 December 2022**

Signed:

Name: **P. Patel**

Date: **12 December 2022**

Title: **Inorganics Chemistry Manager**

ALS Laboratories (UK) Limited was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Laboratories (UK) Limited. Registered in England and Wales. Registration No. 02391955. Registered Office: ALS Laboratories (UK) Limited, Torrington Avenue, Coventry, CV4 9GU.

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**ALS Laboratories (UK) Limited**

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# Certificate of Analysis

ANALYSED BY



RECEIVED: 22/05/2023

Report Number: **COV/2407951/2022**  
Laboratory Number: **22280569**  
Sample Source: **Envirologic**  
Sample Point Description:  
Sample Description: **MW1**  
Sample Matrix: **Ground Water**  
Sample Date/Time: **30 November 2022**  
Sample Received: **30 November 2022**  
Analysis Complete: **12 December 2022**

Issue **1**  
Sample of **2**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Phosphate, Ortho as P LL	0.02	mg/l	02/12/2022	N Cov	WAS067
Nitrate as NO3	10.9	mg/l	07/12/2022	N Cov	WAS036
BOD + ATU	3	mg/l O2	12/12/2022	Y S	SUBCON
Total Coliforms (Colilert)	12	mpn/100ml	02/12/2022	N S	SUBCON
Faecal Coliforms (Colilert)	0	mpn/100ml	02/12/2022	N S	SUBCON
Iron, Total as Fe	452	ug/l	05/12/2022	Y Cov	WAS049
Manganese , Total as Mn	1680	ug/l	05/12/2022	Y Cov	WAS049
Alkalinity as CaCO3	314	mg/l	02/12/2022	Y Cov	WAS025
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	02/12/2022	Y Cov	WAS067
Nitrogen, Total as N	3.4	mg/l	06/12/2022	N Cov	WAS022
Phosphorus , Total as P	<0.12	mg/l	05/12/2022	Y Cov	WAS049
Total Suspended Solids	36.0	mg/l	02/12/2022	Y Cov	WAS006
Solids, Tot Dissolved 180 DegC	431	mg/l	02/12/2022	Y Cov	WAS010
Nitrite as NO2	<0.26	mg/l	08/12/2022	N Cov	WAS036

#### Analyst Comments for 22280569:

This sample has been analysed for Nitrate as NO3 outside recommended stability times. It is therefore possible that the results provided may be compromised. {(\*)}Sample filtered through 0.45um filter prior to Nitrogen analysis.{\*/}

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

**ALS Laboratories (UK) Limited**

Torrington Avenue, Coventry, CV4 9GU  
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

# Certificate of Analysis

ANALYSED BY



RECEIVED: 22/05/2023

Report Number: **COV/2407951/2022**  
Laboratory Number: **22280570**  
Sample Source: **Envirologic**  
Sample Point Description:  
Sample Description: **MW2**  
Sample Matrix: **Ground Water**  
Sample Date/Time: **30 November 2022**  
Sample Received: **30 November 2022**  
Analysis Complete: **12 December 2022**

Issue **1**  
Sample **2** of 2

Test Description	Result	Units	Analysis Date	Accreditation	Method
Phosphate, Ortho as P LL	0.10	mg/l	02/12/2022	N Cov	WAS067
Nitrate as NO3	6.7	mg/l	07/12/2022	N Cov	WAS036
BOD + ATU	2	mg/l O2	12/12/2022	Y S	SUBCON
Total Coliforms (Colilert)	0	mpn/100ml	02/12/2022	N S	SUBCON
Faecal Coliforms (Colilert)	0	mpn/100ml	02/12/2022	N S	SUBCON
Iron, Total as Fe	<230	ug/l	05/12/2022	Y Cov	WAS049
Manganese , Total as Mn	26.3	ug/l	05/12/2022	Y Cov	WAS049
Alkalinity as CaCO3	339	mg/l	02/12/2022	Y Cov	WAS025
Ammoniacal Nitrogen as N (LL)	<0.06	mg/l	02/12/2022	Y Cov	WAS067
Nitrogen, Total as N	2.7	mg/l	06/12/2022	N Cov	WAS022
Phosphorus , Total as P	<0.12	mg/l	05/12/2022	Y Cov	WAS049
Total Suspended Solids	2.00	mg/l	02/12/2022	Y Cov	WAS006
Solids, Tot Dissolved 180 DegC	433	mg/l	02/12/2022	Y Cov	WAS010
Nitrite as NO2	<0.26	mg/l	08/12/2022	N Cov	WAS036

### Analyst Comments for 22280570:

This sample has been analysed for Nitrate as NO3 outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG),

F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel**

Date: **12 December 2022**

Title: **Inorganics Chemistry Manager**

**ALS Laboratories (UK) Limited**

Torrington Avenue, Coventry, CV4 9GU  
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575



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email: [hawardencustomerservices@alsglobal.com](mailto:hawardencustomerservices@alsglobal.com)

website: [www.alsenvironmental.co.uk](http://www.alsenvironmental.co.uk)

RSK Group Plc  
Unit B  
Bluebell Business Centre  
Old Naas Road  
Dublin  
Dublin 12

**Attention:** Brian Cronin

RECEIVED: 22/05/2023

## CERTIFICATE OF ANALYSIS

**Date of report Generation:** 20 April 2021  
**Customer:** RSK Group Plc  
**Sample Delivery Group (SDG):** 210408-111  
**Your Reference:** 603381  
**Location:** North Drogheda  
**Report No:** 594676

We received 6 samples on Thursday April 08, 2021 and 6 of these samples were scheduled for analysis which was completed on Monday April 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

**Sonia McWhan**

Operations Manager





# CERTIFICATE OF ANALYSIS

Validated

**SDG:** 210408-111      **Client Reference:** 603381      **Report Number:** 594676  
**Location:** North Drogheda      **Order Number:** P2021802      **Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
24041131	BH1			06/04/2021
24041133	BH2			06/04/2021
24041135	BH3			06/04/2021
24041136	BH4			06/04/2021
24041138	BH5			06/04/2021
24041139	BH6			06/04/2021

RECEIVED: 22/05/2023

Only received samples which have had analysis scheduled will be shown on the following pages.



# CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b>	210408-111	<b>Client Reference:</b>	603381	<b>Report Number:</b>	594676
<b>Location:</b>	North Drogheda	<b>Order Number:</b>	P2021802	<b>Superseded Report:</b>	

Results Legend			Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6	
# ISO17025 accredited.			Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
M mCERTS accredited.				06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021
aq Aqueous / settled sample.				08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
diss.filt Dissolved / filtered sample.				210408-111	210408-111	210408-111	210408-111	210408-111	210408-111	210408-111
tot.unfilt Total / unfiltered sample.				24041131	24041133	24041135	24041136	24041138	24041138	24041139
* Subcontracted - refer to subcontractor report for accreditation status.										
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery										
(F) Trigger breach confirmed										
1-4*3@ Sample deviation (see appendix)										
Component	LOD/Units	Method								
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	
Fluoride	<0.5 mg/l	TM104	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120	0.469 #	0.351 #	0.438 #	0.296 #	0.479 #	0.437 #	0.437 #	
Aluminium (diss.filt)	<10 µg/l	TM152	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #	
Arsenic (diss.filt)	<0.5 µg/l	TM152	<0.5 #	<0.5 #	<0.5 #	0.582 #	2.57 #	<0.5 #	<0.5 #	
Boron (diss.filt)	<10 µg/l	TM152	<10 #	13.2 #	17.8 #	18.7 #	28.5 #	17.7 #	17.7 #	
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #	<0.08 #	<0.08 #	<0.08 #	<0.08 #	<0.08 #	<0.08 #	
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	1.64 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #	<0.3 #	0.498 #	0.345 #	1.73 #	0.367 #	0.367 #	
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	0.438 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	
Nickel (diss.filt)	<0.4 µg/l	TM152	1.95 #	0.617 #	0.544 #	<0.4 #	0.926 #	<0.4 #	<0.4 #	
Zinc (diss.filt)	<1 µg/l	TM152	2.27 #	1.08 #	<1 #	1.66 #	1.7 #	2.11 #	2.11 #	
Sodium (Dis.Filt)	<0.076 mg/l	TM152	23.2 #	7.91 #	7.64 #	6.11 #	6.76 #	5.82 #	5.82 #	
Potassium (Dis.Filt)	<0.2 mg/l	TM152	0.767 #	0.276 #	0.591 #	0.474 #	61.2 #	6.7 #	6.7 #	
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
Nitrite as NO2	<0.05 mg/l	TM184	0.064 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	
Sulphate	<2 mg/l	TM184	24 #	18.9 #	9.5 #	11.4 #	7.8 #	8.2 #	8.2 #	
Chloride	<2 mg/l	TM184	19.2 #	12.7 #	13.9 #	13.3 #	10.9 #	18.1 #	18.1 #	
Nitrate as NO3	<0.3 mg/l	TM184	14.7 #	8.18 #	5.44 #	5.64 #	9.23 #	0.794 #	0.794 #	
Bromide	<0.06 mg/l	TM226	0.106 #	0.0764 #	<0.06 #	0.0714 #	<0.06 #	0.0747 #	0.0747 #	
pH	<1 pH Units	TM256	6.8 #	7.18 #	7.13 #	7.04 #	7.38 #	7.22 #	7.22 #	
Trifluralin	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
alpha-HCH	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
gamma-HCH (Lindane)	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
Heptachlor	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
Aldrin	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
beta-HCH	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
Isodrin	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
delta-HCH	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
Heptachlor epoxide	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
o,p'-DDE	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
Endosulphan I	<0.01 µg/l	TM343	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	

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# CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b>	210408-111	<b>Client Reference:</b>	603381	<b>Report Number:</b>	594676
<b>Location:</b>	North Drogheda	<b>Order Number:</b>	P2021802	<b>Superseded Report:</b>	

Results Legend			Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1.4.4.6@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021
<b>Component</b>	<b>LOD/Units</b>	<b>Method</b>							
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endrin	<0.01 µg/l	TM343		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o,p'-DDT	<0.01 µg/l	TM343		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
p,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phorate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Diazinon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Triallate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Atrazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Simazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

RECEIVED: 21/05/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 210408-111
Location: North Drogheda

Client Reference: 603381
Order Number: P2021802

Report Number: 594676
Superseded Report:

Table with columns: Results Legend, Customer Sample Ref., BH1, BH2, BH3, BH4, BH5, BH6, Component, LOD/Units, Method. Includes a 'RECEIVED' stamp and various chemical analysis results.



# CERTIFICATE OF ANALYSIS

Validated

SDG: 210408-111  
Location: North Drogheda

Client Reference: 603381  
Order Number: P2021802

Report Number: 594676  
Superseded Report:

## PAH Spec MS - Aqueous (W)

Results Legend			Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6	
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
M	mCERTS accredited.			06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021
aq	Aqueous / settled sample.			08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
diss.filt	Dissolved / filtered sample.			210408-111	210408-111	210408-111	210408-111	210408-111	210408-111	210408-111
tot.unfilt	Total / unfiltered sample.			24041131	24041133	24041135	24041136	24041138	24041139	24041139
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-4*\$@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005 #	0.00781 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005 #	0.00694 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Fluorene (aq)	<0.005 µg/l	TM178	<0.005 #	0.00711 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Chrysene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Pyrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #	
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082 #	<0.082 #	<0.082 #	<0.082 #	<0.082 #	<0.082 #	<0.082 #	

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# CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b>	210408-111	<b>Client Reference:</b>	603381	<b>Report Number:</b>	594676
<b>Location:</b>	North Drogheda	<b>Order Number:</b>	P2021802	<b>Superseded Report:</b>	

## TPH CWG (W)

Results Legend			Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6	
# ISO17025 accredited.			Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
M mCERTS accredited.				06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021	06/04/2021
aq Aqueous / settled sample.				08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
diss.filt Dissolved / filtered sample.				210408-111	210408-111	210408-111	210408-111	210408-111	210408-111	210408-111
tot.unfilt Total / unfiltered sample.				24041131	24041133	24041135	24041136	24041138	24041139	24041139
* Subcontracted - refer to subcontractor report for accreditation status.										
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery										
(F) Trigger breach confirmed										
1-4*\$@ Sample deviation (see appendix)										
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245	98	91	99	94	95	89		
GRO >C5-C12	<50 µg/l	TM245	<50 #	<50 #	<50 #	<50 #	<50 #	<50 #	<50 #	
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #	
Benzene	<7 µg/l	TM245	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #	
Toluene	<4 µg/l	TM245	<4 #	<4 #	<4 #	<4 #	<4 #	<4 #	<4 #	
Ethylbenzene	<5 µg/l	TM245	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #	
m,p-Xylene	<8 µg/l	TM245	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #	
o-Xylene	<3 µg/l	TM245	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #	
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11	<11	<11	<11	
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28	<28	
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	

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# CERTIFICATE OF ANALYSIS

Validated

SDG: 210408-111  
Location: North Drogheda

Client Reference: 603381  
Order Number: P2021802

Report Number: 594676  
Superseded Report:

## VOC MS (W)

Results Legend			Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-4*§@	Sample deviation (see appendix)								
Component	LOD/Units	Method	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021
Dibromofluoromethane**	%	TM208	08/04/2021 210408-111 24041131	109	110	114	111	110	111
Toluene-d8**	%	TM208	08/04/2021 210408-111 24041133	97	98.3	97.1	97.3	97.8	99.1
4-Bromofluorobenzene**	%	TM208	08/04/2021 210408-111 24041133	95.1	97.6	96.6	96.1	96.2	96.8
Dichlorodifluoromethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloromethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208	08/04/2021 210408-111 24041133	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromochloromethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	08/04/2021 210408-111 24041133	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

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# CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b>	210408-111	<b>Client Reference:</b>	603381	<b>Report Number:</b>	594676
<b>Location:</b>	North Drogheda	<b>Order Number:</b>	P2021802	<b>Superseded Report:</b>	

## VOC MS (W)

Results Legend			Customer Sample Ref.	BH1	BH2	BH3	BH4	BH5	BH6
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1.4.4.6@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021	Ground Water (GW) 06/04/2021
			08/04/2021 210408-111 24041131	08/04/2021 210408-111 24041133	08/04/2021 210408-111 24041135	08/04/2021 210408-111 24041136	08/04/2021 210408-111 24041138	08/04/2021 210408-111 24041139	08/04/2021 210408-111 24041139
Component	LOD/Units	Method							
1,3-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

RECEIVED: 21/05/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 210408-111 Client Reference: 603381 Report Number: 594676
Location: North Drogheda Order Number: P2021802 Superseded Report:

VOC MS (W)

Table with columns for Results Legend, Customer Sample Ref., Depth (m), Sample Type, Date Sampled, Sampled Time, Date Received, SDG Ref, Lab Sample No.(s), AGS Reference, Component, LOD/Units, Method, and six borehole columns (BH1-BH6) showing detection levels for 1,2,3-Trichlorobenzene and 1,3,5-Trichlorobenzene.

RECEIVED: 21/05/2023