

Spink Quarry, Knockbaun, Abbeyleix, Co. Laois

Spink Quarry

Environmental Impact Assessment Report

Appendix 7.5

Laboratory Certificates of Analysis

2021

CERTIFICATE OF ANALYSIS

Client : Dr. Pamela Bartley
 HYDRO-G
 50 Henry Street
 Galway
 Galway

Report No. : 435140
 Date of Receipt : 17/12/2020
 Start Date of Analysis : 17/12/2020
 Date of Report : 30/12/2020
 Order Number :
 Sample taken by : Client

| Lab No | Sample Description | Test | Ref. | Result | Units |
|---------|-------------------------|--|------|----------------------|-------------|
| 1116151 | 1. 20-SP-01 16/12/20 | BOD | I,R | <1 | mg/l |
| | | Suspended Solids | I,R | 419 | mg/l |
| | | COD | I,R | <10 | mg/l |
| | | pH | I,R | 7.7 | pH Units |
| | | Conductivity @20C | I,R | 308 | uS/cm |
| | | Nitrate as N | I,R | 0.404 | mg/l |
| | | Nitrite as N | I,R | <0.005 | mg/l |
| | | Total Phosphorus as P | I,R | 0.44 | mg/l |
| | | Ammonium as NH4-N | I,R | 0.012 | mg/l |
| | | PRO Water (C5-C12) by GC-FID | I,R | <10 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | I,R | 47 **Unknown pattern | ug/l |
| | | Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P | I,R | 0.126 | mg/l |



Approved by:

Luiza Singh

Luiza Singh
Operations Supervisor

See below for test specifications and accreditation status.
 This report only relates to items tested and shall not be reproduced but in full with the permission of CLS.
 est. is an estimated count.
 CLS will test food, water and swabs samples within 24 hours of receipt.
 Where samples have been taken by the Client, results apply to the samples as received.

| In-House Test | Specification | Measurement of Uncertainty | 17025 | GMP/FDA* | ISO** |
|--|----------------|-----------------------------|-------|----------|-------|
| BOD | CLS 12 | +/- 9.33 % | Yes | No | Yes |
| Suspended Solids | CLS 13 | +/- 43 @ 500 mg/l | Yes | No | Yes |
| COD | CLS 52 | +/- 4.48 % | Yes | No | Yes |
| pH | CLS 26 | +/- 0.133 pH units | Yes | No | Yes |
| Conductivity @20C | CLS 67 | +/- 4.92 % | Yes | No | Yes |
| Nitrate as N | Konelab CLS 39 | +/- 0.45 @ 4 mg/l NO3-N | Yes | No | Yes |
| Nitrite as N | Konelab CLS 37 | +/- 7.55 % | Yes | No | Yes |
| Total Phosphorus as P | CLS 151 | +/- 10.53 % | Yes | No | Yes |
| Ammonium as NH4-N | Konelab CLS 40 | +/- 0.016 @ 0.31 mg/l NH3-N | Yes | No | Yes |
| PRO Water (C5-C12) by GC-FID | CLS 148 | +/- 29.7ug/l @ 200ug/l | Yes | No | Yes |
| Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | CLS 147 | +/- 26.37@200ug/l | Yes | No | Yes |
| Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P | Konelab CLS 35 | +/- 0.04 @ 0.3 mg/l PO4 | Yes | No | Yes |

*Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

| Lab No | Sample ID | Sample Condition on Receipt | Sampling Date |
|---------|----------------------|-----------------------------|---------------|
| 1116151 | 1. 20-SP-01 16/12/20 | Good condition | 16/12/2020 |

CERTIFICATE OF ANALYSIS

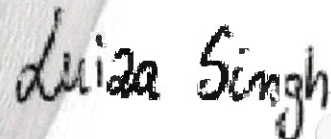
Client : Dr. Pamela Bartley
 HYDRO-G
 50 Henry Street
 Galway
 Galway

Report No. : 435141
 Date of Receipt : 17/12/2020
 Start Date of Analysis : 17/12/2020
 Date of Report : 30/12/2020
 Order Number :
 Sample taken by : Client

| Lab No | Sample Description | Test | Ref. | Result | Units |
|---------|-------------------------|--|------|----------------------|-------------|
| 1116152 | 2. 20-SP-04 16/12/20 | BOD | I,R | <1 | mg/l |
| | | Suspended Solids | I,R | 11 | mg/l |
| | | COD | I,R | 12 | mg/l |
| | | pH | I,R | 6.2 | pH Units |
| | | Conductivity @20C | I,R | 119 | uS/cm |
| | | Nitrate as N | I,R | 0.681 | mg/l |
| | | Nitrite as N | I,R | <0.005 | mg/l |
| | | Total Phosphorus as P | I,R | 0.08 | mg/l |
| | | Ammonium as NH4-N | I,R | 0.01 | mg/l |
| | | PRO Water (C5-C12) by GC-FID | I,R | <10 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | I,R | 67 **Unknown pattern | ug/l |
| | | Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P | I,R | <0.01 | mg/l |



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 Operations Supervisor

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Complete Laboratory Solutions

Complete Laboratory Solutions
 [Tel] 091 574355
 [Fax] 091 574356
 [Email] services@cls.ie
 [web] www.cls.ie

| In-House Test | Specification | Measurement of Uncertainty | 17025 | GMP/FDA* | ISO** |
|--|----------------|-----------------------------|-------|----------|-------|
| BOD | CLS 12 | +/- 9.33 % | Yes | No | Yes |
| Suspended Solids | CLS 13 | +/- 43 @ 500 mg/l | Yes | No | Yes |
| COD | CLS 52 | +/- 4.48 % | Yes | No | Yes |
| pH | CLS 26 | +/- 0.133 pH units | Yes | No | Yes |
| Conductivity @20C | CLS 67 | +/- 4.92 % | Yes | No | Yes |
| Nitrate as N | Konelab CLS 39 | +/- 0.45 @ 4 mg/l NO3-N | Yes | No | Yes |
| Nitrite as N | Konelab CLS 37 | +/- 7.55 % | Yes | No | Yes |
| Total Phosphorus as P | CLS 151 | +/- 10.53 % | Yes | No | Yes |
| Ammonium as NH4-N | Konelab CLS 40 | +/- 0.016 @ 0.31 mg/l NH3-N | Yes | No | Yes |
| PRO Water (C5-C12) by GC-FID | CLS 148 | +/- 29.7ug/l @ 200ug/l | Yes | No | Yes |
| Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | CLS 147 | +/- 26.37@200ug/l | Yes | No | Yes |
| Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P | Konelab CLS 35 | +/- 0.04 @ 0.3 mg/l PO4 | Yes | No | Yes |

*Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

| Lab No | Sample ID | Sample Condition on Receipt | Sampling Date |
|---------|----------------------|-----------------------------|---------------|
| 1116152 | 2. 20-SP-04 16/12/20 | Good condition | 16/12/2020 |

CERTIFICATE OF ANALYSIS

Client : Dr. Pamela Bartley
HYDRO-G
50 Henry Street
Galway
Galway

Report No. : 435142
Date of Receipt : 17/12/2020
Start Date of Analysis : 17/12/2020
Date of Report : 30/12/2020
Order Number :
Sample taken by : Client

| Lab No | Sample Description | Test | Ref. | Result | Units |
|---------|-------------------------------|--|------|----------------------|-------------|
| 1116153 | 3. Mtn Str @ SP04 16/12/20 | BOD | I,R | <1 | mg/l |
| | | Suspended Solids | I,R | 2 | mg/l |
| | | COD | I,R | 31 | mg/l |
| | | pH | I,R | 5.9 | pH Units |
| | | Conductivity @20C | I,R | 82.3 | uS/cm |
| | | Nitrate as N | I,R | 0.915 | mg/l |
| | | Nitrite as N | I,R | <0.005 | mg/l |
| | | Total Phosphorus as P | I,R | <0.05 | mg/l |
| | | Ammonium as NH4-N | I,R | 0.018 | mg/l |
| | | PRO Water (C5-C12) by GC-FID | I,R | <10 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | I,R | 76 **Unknown pattern | ug/l |
| | | Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P | I,R | <0.01 | mg/l |



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Luiza Singh

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Operations Supervisor

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| In-House Test | Specification | Measurement of Uncertainty | 17025 | GMP/FDA* | ISO** |
|--|----------------|-----------------------------|-------|----------|-------|
| BOD | CLS 12 | +/- 9.33 % | Yes | No | Yes |
| Suspended Solids | CLS 13 | +/- 43 @ 500 mg/l | Yes | No | Yes |
| COD | CLS 52 | +/- 4.48 % | Yes | No | Yes |
| pH | CLS 26 | +/- 0.133 pH units | Yes | No | Yes |
| Conductivity @20C | CLS 67 | +/- 4.92 % | Yes | No | Yes |
| Nitrate as N | Konelab CLS 39 | +/- 0.45 @ 4 mg/l NO3-N | Yes | No | Yes |
| Nitrite as N | Konelab CLS 37 | +/- 7.55 % | Yes | No | Yes |
| Total Phosphorus as P | CLS 151 | +/- 10.53 % | Yes | No | Yes |
| Ammonium as NH4-N | Konelab CLS 40 | +/- 0.016 @ 0.31 mg/l NH3-N | Yes | No | Yes |
| PRO Water (C5-C12) by GC-FID | CLS 148 | +/- 29.7ug/l @ 200ug/l | Yes | No | Yes |
| Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | CLS 147 | +/- 26.37@200ug/l | Yes | No | Yes |
| Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P | Konelab CLS 35 | +/- 0.04 @ 0.3 mg/l PO4 | Yes | No | Yes |

*Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

**Laboratory Analysis, Sampling, Food Safety Monitoring and Analysts on Contract are all ISO 9001 certified.

| Lab No | Sample ID | Sample Condition on Receipt | Sampling Date |
|---------|----------------------------|-----------------------------|---------------|
| 1116153 | 3. Mtn Str @ SP04 16/12/20 | Good condition | 16/12/2020 |

CERTIFICATE OF ANALYSIS

Client : Dr. Pamela Bartley
HYDRO-G
50 Henry Street
Galway
Galway

Report No. : 435143
Date of Receipt : 17/12/2020
Start Date of Analysis : 17/12/2020
Date of Report : 30/12/2020
Order Number :
Sample taken by : Client

| Lab No | Sample Description | Test | Ref. | Result | Units |
|---------|----------------------------|--|------|----------------------|-------------|
| 1116154 | 4. Floor Spink 16/12/20 | BOD | I,R | <1 | mg/l |
| | | Suspended Solids | I,R | 2 | mg/l |
| | | COD | I,R | <10 | mg/l |
| | | pH | I,R | 8.0 | pH Units |
| | | Conductivity @20C | I,R | 250 | uS/cm |
| | | Nitrate as N | I,R | 0.405 | mg/l |
| | | Nitrite as N | I,R | <0.005 | mg/l |
| | | Total Phosphorus as P | I,R | <0.05 | mg/l |
| | | Ammonium as NH4-N | I,R | 0.01 | mg/l |
| | | PRO Water (C5-C12) by GC-FID | I,R | <10 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | I,R | 52 **Unknown pattern | ug/l |
| | | Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P | I,R | <0.01 | mg/l |



Approved by:

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Operations Supervisor

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| In-House Test | Specification | Measurement of Uncertainty | 17025 | GMP/FDA* | ISO** |
|--|----------------|-----------------------------|-------|----------|-------|
| BOD | CLS 12 | +/- 9.33 % | Yes | No | Yes |
| Suspended Solids | CLS 13 | +/- 43 @ 500 mg/l | Yes | No | Yes |
| COD | CLS 52 | +/- 4.48 % | Yes | No | Yes |
| pH | CLS 26 | +/- 0.133 pH units | Yes | No | Yes |
| Conductivity @20C | CLS 67 | +/- 4.92 % | Yes | No | Yes |
| Nitrate as N | Konelab CLS 39 | +/- 0.45 @ 4 mg/l NO3-N | Yes | No | Yes |
| Nitrite as N | Konelab CLS 37 | +/- 7.55 % | Yes | No | Yes |
| Total Phosphorus as P | CLS 151 | +/- 10.53 % | Yes | No | Yes |
| Ammonium as NH4-N | Konelab CLS 40 | +/- 0.016 @ 0.31 mg/l NH3-N | Yes | No | Yes |
| PRO Water (C5-C12) by GC-FID | CLS 148 | +/- 29.7ug/l @ 200ug/l | Yes | No | Yes |
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| Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P | Konelab CLS 35 | +/- 0.04 @ 0.3 mg/l PO4 | Yes | No | Yes |

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| Lab No | Sample ID | Sample Condition on Receipt | Sampling Date |
|---------|-------------------------|-----------------------------|---------------|
| 1116154 | 4. Floor Spink 16/12/20 | Good condition | 16/12/2020 |

Envirologic Ltd
78 St Peters Terrace
Howth
Co Dublin
Ireland

Attention : Pat Breheny
Date : 8th April, 2021
Your reference : 1890
Our reference : Test Report 21/4569 Batch 1
Location : Spink
Date samples received : 29th March, 2021
Status : Final report
Issue : 1

One sample was received for analysis on 29th March, 2021 of which one was scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied. All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Phil Sommerton BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Envirologic Ltd
Reference: 1890
Location: Spink
Contact: Pat Breheny
EMT Job No: 21/4569

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
 H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HN0₃

| EMT Sample No. 1-8 | | | | | | | | | Please see attached notes for all abbreviations and acronyms | | |
|-------------------------------------|--------------------|--|--|--|--|--|--|--|--|-------|------------|
| Sample ID | PW1 | | | | | | | | | | |
| Depth | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | |
| Containers | V H N P BOD G | | | | | | | | | | |
| Sample Date | 26/03/2021 13:00 | | | | | | | | | | |
| Sample Type | Ground Water | | | | | | | | | | |
| Batch Number | 1 | | | | | | | | | | |
| Date of Receipt | 29/03/2021 | | | | | | | | LOD/LOR | Units | Method No. |
| Total Aluminium | 13.7 | | | | | | | | <1.5 | ug/l | TM170/PM14 |
| Total Cadmium | <0.03 | | | | | | | | <0.03 | ug/l | TM170/PM14 |
| Total Iron | 16.0 | | | | | | | | <4.7 | ug/l | TM170/PM14 |
| Total Manganese | 425.0 | | | | | | | | <1.5 | ug/l | TM170/PM14 |
| Total Mercury | <0.5 | | | | | | | | <0.5 | ug/l | TM170/PM14 |
| Total Phosphorus | 6 | | | | | | | | <5 | ug/l | TM170/PM14 |
| Total Zinc | 2.3 | | | | | | | | <1.5 | ug/l | TM170/PM14 |
| Total Calcium | 47.5 ^{AA} | | | | | | | | <0.2 | mg/l | TM30/PM14 |
| Total Magnesium | 18.6 ^{AA} | | | | | | | | <0.1 | mg/l | TM30/PM14 |
| Total Potassium | <1.0 ^{AA} | | | | | | | | <0.1 | mg/l | TM30/PM14 |
| Total Sodium | 8.9 ^{AA} | | | | | | | | <0.1 | mg/l | TM30/PM14 |
| Total Hardness Dissolved (as CaCO3) | 191 | | | | | | | | <1 | mg/l | TM30/PM14 |
| PAH MS | | | | | | | | | | | |
| Naphthalene [#] | <0.1 | | | | | | | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene [#] | <0.013 | | | | | | | | <0.013 | ug/l | TM4/PM30 |
| Acenaphthene [#] | <0.013 | | | | | | | | <0.013 | ug/l | TM4/PM30 |
| Fluorene [#] | <0.014 | | | | | | | | <0.014 | ug/l | TM4/PM30 |
| Phenanthrene [#] | <0.011 | | | | | | | | <0.011 | ug/l | TM4/PM30 |
| Anthracene [#] | <0.013 | | | | | | | | <0.013 | ug/l | TM4/PM30 |
| Fluoranthene [#] | <0.012 | | | | | | | | <0.012 | ug/l | TM4/PM30 |
| Pyrene [#] | <0.013 | | | | | | | | <0.013 | ug/l | TM4/PM30 |
| Benzo(a)anthracene [#] | <0.015 | | | | | | | | <0.015 | ug/l | TM4/PM30 |
| Chrysene [#] | <0.011 | | | | | | | | <0.011 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene [#] | <0.018 | | | | | | | | <0.018 | ug/l | TM4/PM30 |
| Benzo(a)pyrene [#] | <0.016 | | | | | | | | <0.016 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene [#] | <0.011 | | | | | | | | <0.011 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene [#] | <0.01 | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene [#] | <0.011 | | | | | | | | <0.011 | ug/l | TM4/PM30 |
| PAH 16 Total [#] | <0.195 | | | | | | | | <0.195 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | <0.01 | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | <0.01 | | | | | | | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 88 | | | | | | | | <0 | % | TM4/PM30 |
| MTBE [#] | | | | | | | | | | | |
| MTBE [#] | <5 | | | | | | | | <5 | ug/l | TM36/PM12 |
| Benzene [#] | <5 | | | | | | | | <5 | ug/l | TM36/PM12 |
| Toluene [#] | <5 | | | | | | | | <5 | ug/l | TM36/PM12 |
| Ethylbenzene [#] | <5 | | | | | | | | <5 | ug/l | TM36/PM12 |
| m/p-Xylene [#] | <5 | | | | | | | | <5 | ug/l | TM36/PM12 |
| o-Xylene [#] | <5 | | | | | | | | <5 | ug/l | TM36/PM12 |

Element Materials Technology

Client Name: Envirologic Ltd
Reference: 1890
Location: Spink
Contact: Pat Breheny
EMT Job No: 21/4569

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
 H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

| EMT Sample No. 1-8 Sample ID PW1 Depth COC No / misc Containers V H HN P BOD G Sample Date 28/03/2021 13:00 Sample Type Ground Water Batch Number 1 Date of Receipt 29/03/2021 | | | | | | | | | Please see attached notes for all abbreviations and acronyms | | |
|--|-------|--|--|--|--|--|--|--|--|----------|---------------|
| | | | | | | | | | LOD/LOR | Units | Method No. |
| TPH CWG | | | | | | | | | | | |
| Aliphatics | | | | | | | | | | | |
| >C5-C6 [#] | <10 | | | | | | | | <10 | ug/l | TM36/PM12 |
| >C6-C8 [#] | <10 | | | | | | | | <10 | ug/l | TM36/PM12 |
| >C8-C10 [#] | <10 | | | | | | | | <10 | ug/l | TM36/PM12 |
| >C10-C12 [#] | <5 | | | | | | | | <5 | ug/l | TM5/PM16/PM30 |
| >C12-C16 [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| >C16-C21 [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| >C21-C35 [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| Total aliphatics C5-35 [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| Aromatics | | | | | | | | | | | |
| >C5-EC7 [#] | <10 | | | | | | | | <10 | ug/l | TM36/PM12 |
| >EC7-EC8 [#] | <10 | | | | | | | | <10 | ug/l | TM36/PM12 |
| >EC8-EC10 [#] | <10 | | | | | | | | <10 | ug/l | TM36/PM12 |
| >EC10-EC12 [#] | <5 | | | | | | | | <5 | ug/l | TM5/PM16/PM30 |
| >EC12-EC16 [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| >EC16-EC21 [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| >EC21-EC35 [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| Total aromatics C5-35 [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| Total aliphatics and aromatics(C5-35) [#] | <10 | | | | | | | | <10 | ug/l | TM5/PM16/PM30 |
| Sulphate as SO ₄ [#] | 12.7 | | | | | | | | <0.5 | mg/l | TM38/PM0 |
| Chloride [#] | 16.7 | | | | | | | | <0.3 | mg/l | TM38/PM0 |
| Nitrate as NO ₃ [#] | 2.7 | | | | | | | | <0.2 | mg/l | TM38/PM0 |
| Nitrite as NO ₂ [#] | <0.02 | | | | | | | | <0.02 | mg/l | TM38/PM0 |
| Ortho Phosphate as PO ₄ | <0.03 | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| MRP Ortho Phosphate as PO ₄ | <0.06 | | | | | | | | <0.06 | mg/l | TM38/PM0 |
| Ammoniacal Nitrogen as NH ₄ [#] | 0.03 | | | | | | | | <0.03 | mg/l | TM38/PM0 |
| Total Alkalinity as CaCO ₃ [#] | 186 | | | | | | | | <1 | mg/l | TM75/PM0 |
| Bicarbonate Alkalinity as CaCO ₃ (water soluble) | 186 | | | | | | | | <1 | mg/l | TM75/PM0 |
| Electrical Conductivity @25C [#] | 412 | | | | | | | | <2 | uS/cm | TM76/PM0 |
| pH [#] | 7.63 | | | | | | | | <0.01 | pH units | TM73/PM0 |
| Total Organic Carbon [#] | <2 | | | | | | | | <2 | mg/l | TM60/PM0 |
| Total Suspended Solids [#] | <10 | | | | | | | | <10 | mg/l | TM37/PM0 |

Please include all sections of this report if it is reproduced

Element Materials Technology

Notification of Deviating Samples

Client Name: Envirologic Ltd
Reference: 1890
Location: Spink
Contact: Pat Breheny

| EMT Job No. | Batch | Sample ID | Depth | EMT Sample No. | Analysis | Reason |
|--|-------|-----------|-------|----------------|----------|--------|
| No deviating sample report results for job 21/4569 | | | | | | |

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.



ALS Environmental Ltd
Torrington Avenue
Coventry
CV4 9GU

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www.alsenvironmental.co.uk

Mr Breheny
Enviologic
Enviologic Ltd.
78 St Peters Terrace
Howth
Dublin D13 HO08
South Dublin

07 April 2021

Test Report: COV/2110988/2021

Dear Mr Breheny

Analysis of your sample(s) received on 26 March 2021 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 Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

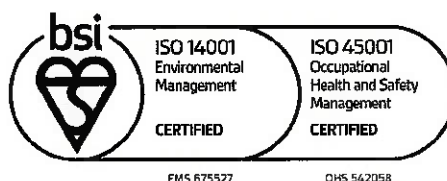
Signed:

Name:

B. Paige

Title:

Microbiology Team Leader



Report Summary

ANALYSED BY

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



Date of Issue: **07 April 2021**

Report Number: **COV/2110988/2021**

Issue **1**

This issue replaces
all previous issues

Job Description: Micro analysis

Job Location: 1890 Spink

Number of Samples
included in this report **1**

Job Received: **26 March 2021**

Number of Test Results
included in this report **4**

Analysis Commenced: **29 March 2021**

Signed:

Name: **B. Paige**

Date: **07 April 2021**

Title: **Microbiology Team Leader**

ALS Environmental Ltd 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.

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Page 1 of 3

Certificate of Analysis

ANALYSED BY



Report Number: **COV/2110988/2021**
Laboratory Number: **20276306**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **PW1**
Sample Matrix: **Not Specified**
Sample Date/Time: **26 March 2021**
Sample Received: **26 March 2021**
Analysis Complete: **06 April 2021**

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

| Test Description | Result | Units | Analysis Date | Accreditation | Method |
|-----------------------------|--------|---------------------|---------------|---------------|--------|
| BODS + ATU | <2 | mg/l O ₂ | 06/04/2021 | N S | SUBCON |
| Total Coliforms (Colilert) | 0 | mpn/100ml | 29/03/2021 | N S | SUBCON |
| Faecal Coliforms (Colilert) | 0 | mpn/100ml | 29/03/2021 | N S | SUBCON |
| TOC as C | 1.1 | mg/l | 30/03/2021 | N Cov | WAS005 |

Analyst Comments for 20276306: No Analyst Comment

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: **B. Paige**

Date: **07 April 2021**

Title: **Microbiology Team Leader**

ALS Environmental Ltd

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

Page 2 of 3

Envirologic Ltd
78 St Peters Terrace
Howth
Co Dublin
Ireland



Attention : Pat Breheny
Date : 19th April, 2021
Your reference : 1890
Our reference : Test Report 21/5240 Batch 1
Location : Spink
Date samples received : 9th April, 2021
Status : Final report
Issue : 1

Seven samples were received for analysis on 9th April, 2021 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied. All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Phil Sommerton BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Envirologic Ltd
Reference: 1890
Location: Spink
Contact: Pat Breheny
EMT Job No: 21/5240

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
 H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

Please see attached notes for all abbreviations and acronyms

| EMT Sample No. | 1-5 | 6-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31-35 | | | | |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|---------|-------|------------|
| | Sample ID | PW2 | PW3 | SUMP | OUTFALL | SW-WEST | SW-EAST | SW2 | | | |
| Depth | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | |
| Containers | H HN P G | H HN P G | H HN P G | H HN P G | H HN P G | H HN P G | H HN P G | H HN P G | | | |
| Sample Date | 08/04/2021 15:50 | 08/04/2021 15:50 | 08/04/2021 15:50 | 08/04/2021 15:50 | 08/04/2021 15:50 | 08/04/2021 15:50 | 08/04/2021 15:50 | 08/04/2021 15:50 | | | |
| Sample Type | Ground Water | Ground Water | Ground Water | Ground Water | Surface Water | Surface Water | Surface Water | Surface Water | | | |
| Batch Number | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | LOD/LOR | Units | Method No. |
| Date of Receipt | 09/04/2021 | 09/04/2021 | 09/04/2021 | 09/04/2021 | 09/04/2021 | 09/04/2021 | 09/04/2021 | 09/04/2021 | | | |
| Total Aluminium | 22.3 | 72.5 | 33.6 | 21.9 | 41.9 | 181.0 | 100.2 | | <1.5 | ug/l | TM170/PM14 |
| Total Cadmium | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | 0.06 | <0.03 | | <0.03 | ug/l | TM170/PM14 |
| Total Iron | 84.7 | 215.8 | 21.1 | 50.7 | 97.3 | 282.1 | 158.0 | | <4.7 | ug/l | TM170/PM14 |
| Total Manganese | 41.6 | 17.0 | 4.6 | 143.0 | 7.1 | 18.0 | 18.4 | | <1.5 | ug/l | TM170/PM14 |
| Total Mercury | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | <0.5 | ug/l | TM170/PM14 |
| Total Phosphorus | 11 | 12 | 11 | 12 | 31 | 18 | 27 | | <5 | ug/l | TM170/PM14 |
| Total Zinc | 5.5 | 4.1 | 3.9 | 4.2 | 3.8 | 5.4 | 4.1 | | <1.5 | ug/l | TM170/PM14 |
| Total Calcium | 42.2 | 41.0 | 25.0 | 46.0 | 45.5 | 36.4 | 28.6 | | <0.2 | mg/l | TM30/PM14 |
| Total Magnesium | 10.9 | 11.2 | 9.6 | 13.0 | 4.3 | 5.2 | 5.9 | | <0.1 | mg/l | TM30/PM14 |
| Total Potassium | 1.6 | 0.6 | 1.8 | 1.9 | 1.4 | 1.3 | 2.3 | | <0.1 | mg/l | TM30/PM14 |
| Total Sodium | 8.4 | 11.0 | 8.4 | 8.8 | 7.3 | 8.1 | 13.3 | | <0.1 | mg/l | TM30/PM14 |
| Total Hardness Dissolved (as CaCO ₃) | 152 | 165 | 109 | 178 | 149 | 108 | 93 | | <1 | mg/l | TM30/PM14 |
| PAH MS | | | | | | | | | | | |
| Naphthalene [#] | <0.1 | <0.1 | <0.1 | <0.1 | - | - | - | | <0.1 | ug/l | TM4/PM30 |
| Acenaphthylene [#] | <0.013 | <0.013 | <0.013 | <0.013 | - | - | - | | <0.013 | ug/l | TM4/PM30 |
| Acenaphthene [#] | <0.013 | <0.013 | <0.013 | <0.013 | - | - | - | | <0.013 | ug/l | TM4/PM30 |
| Fluorene [#] | <0.014 | <0.014 | <0.014 | <0.014 | - | - | - | | <0.014 | ug/l | TM4/PM30 |
| Phenanthrene [#] | <0.011 | <0.011 | <0.011 | <0.011 | - | - | - | | <0.011 | ug/l | TM4/PM30 |
| Anthracene [#] | <0.013 | <0.013 | <0.013 | <0.013 | - | - | - | | <0.013 | ug/l | TM4/PM30 |
| Fluoranthene [#] | <0.012 | <0.012 | <0.012 | <0.012 | - | - | - | | <0.012 | ug/l | TM4/PM30 |
| Pyrene [#] | <0.013 | <0.013 | <0.013 | <0.013 | - | - | - | | <0.013 | ug/l | TM4/PM30 |
| Benzo(a)anthracene [#] | <0.015 | <0.015 | <0.015 | <0.015 | - | - | - | | <0.015 | ug/l | TM4/PM30 |
| Chrysene [#] | <0.011 | <0.011 | <0.011 | <0.011 | - | - | - | | <0.011 | ug/l | TM4/PM30 |
| Benzo(bk)fluoranthene [#] | <0.018 | <0.018 | <0.018 | <0.018 | - | - | - | | <0.018 | ug/l | TM4/PM30 |
| Benzo(a)pyrene [#] | <0.016 | <0.016 | <0.016 | <0.016 | - | - | - | | <0.016 | ug/l | TM4/PM30 |
| Indeno(123cd)pyrene [#] | <0.011 | <0.011 | <0.011 | <0.011 | - | - | - | | <0.011 | ug/l | TM4/PM30 |
| Dibenzo(ah)anthracene [#] | <0.01 | <0.01 | <0.01 | <0.01 | - | - | - | | <0.01 | ug/l | TM4/PM30 |
| Benzo(ghi)perylene [#] | <0.011 | <0.011 | <0.011 | <0.011 | - | - | - | | <0.011 | ug/l | TM4/PM30 |
| PAH 16 Total [#] | <0.195 | <0.195 | <0.195 | <0.195 | - | - | - | | <0.195 | ug/l | TM4/PM30 |
| Benzo(b)fluoranthene | <0.01 | <0.01 | <0.01 | <0.01 | - | - | - | | <0.01 | ug/l | TM4/PM30 |
| Benzo(k)fluoranthene | <0.01 | <0.01 | <0.01 | <0.01 | - | - | - | | <0.01 | ug/l | TM4/PM30 |
| PAH Surrogate % Recovery | 88 | 85 | 92 | 80 | - | - | - | | <0 | % | TM4/PM30 |
| MTBE[#] | | | | | | | | | | | |
| MTBE [#] | <5 | <5 | <5 | <5 | - | - | - | | <5 | ug/l | TM36/PM12 |
| Benzene [#] | <5 | <5 | <5 | <5 | - | - | - | | <5 | ug/l | TM36/PM12 |
| Toluene [#] | <5 | <5 | <5 | <5 | - | - | - | | <5 | ug/l | TM36/PM12 |
| Ethylbenzene [#] | <5 | <5 | <5 | <5 | - | - | - | | <5 | ug/l | TM36/PM12 |
| m/p-Xylene [#] | <5 | <5 | <5 | <5 | - | - | - | | <5 | ug/l | TM36/PM12 |
| o-Xylene [#] | <5 | <5 | <5 | <5 | - | - | - | | <5 | ug/l | TM36/PM12 |

Element Materials Technology

Client Name: Envirologic Ltd
Reference: 1890
Location: Spink
Contact: Pat Breheny
EMT Job No: 21/5240

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
 H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

| EMT Sample No. | 1-5 | | 6-10 | | 11-15 | | 16-20 | | 21-25 | | 26-30 | | 31-35 | | LOD/LOR | Units | Method No. |
|--|-----------|-------|-------|-------|---------|---------|---------|-------|-------|---------------|------------|-------------|-------------|--------------|---------|---------------|------------|
| | Sample ID | PW2 | PW3 | SUMP | OUTFALL | SW-WEST | SW-EAST | SW2 | Depth | COC No / misc | Containers | Sample Date | Sample Type | Batch Number | | | |
| Please see attached notes for all abbreviations and acronyms | | | | | | | | | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | | | | | |
| Aliphatics | | | | | | | | | | | | | | | | | |
| >C5-C6* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM36/PM12 | |
| >C6-C8* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM36/PM12 | |
| >C8-C10* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM36/PM12 | |
| >C10-C12* | <5 | <5 | <5 | <5 | - | - | - | <5 | <5 | <5 | <5 | <5 | <5 | <5 | ug/l | TM5/PM16/PM30 | |
| >C12-C16* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| >C16-C21* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| >C21-C35* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| Total aliphatics C5-35* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| Aromatics | | | | | | | | | | | | | | | | | |
| >C5-EC7* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM36/PM12 | |
| >EC7-EC8* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM36/PM12 | |
| >EC8-EC10* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM36/PM12 | |
| >EC10-EC12* | <5 | <5 | <5 | <5 | - | - | - | <5 | <5 | <5 | <5 | <5 | <5 | <5 | ug/l | TM5/PM16/PM30 | |
| >EC12-EC16* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| >EC16-EC21* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| >EC21-EC35* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| Total aromatics C5-35* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| Total aliphatics and aromatics(C5-35)* | <10 | <10 | <10 | <10 | - | - | - | <10 | <10 | <10 | <10 | <10 | <10 | <10 | ug/l | TM5/PM16/PM30 | |
| Sulphate as SO ₄ * | 45.3 | 70.7 | 27.5 | 58.3 | 8.6 | 28.9 | 7.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | mg/l | TM38/PM0 | |
| Chloride* | 12.9 | 15.5 | 13.8 | 13.4 | 12.2 | 11.4 | 20.9 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 | mg/l | TM38/PM0 | |
| Nitrate as NO ₃ * | 4.0 | 3.1 | 2.4 | <0.2 | 0.9 | 1.5 | 7.0 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | mg/l | TM38/PM0 | |
| Nitrite as NO ₂ * | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | mg/l | TM38/PM0 | |
| Ortho Phosphate as PO ₄ | <0.03 | <0.03 | <0.03 | <0.03 | 0.05 | <0.03 | 0.04 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | mg/l | TM38/PM0 | |
| MRP Ortho Phosphate as PO ₄ | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | mg/l | TM38/PM0 | |
| Ammoniacal Nitrogen as NH ₄ | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | mg/l | TM38/PM0 | |
| Total Alkalinity as CaCO ₃ * | 110 | 102 | 86 | 121 | 149 | 87 | 89 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | mg/l | TM75/PM0 | |
| Bicarbonate Alkalinity as CaCO ₃ (water soluble) | 110 | 102 | 86 | 121 | 134 | 87 | 89 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | mg/l | TM75/PM0 | |
| Total Organic Carbon* | <2 | <2 | <2 | <2 | 5 | 5 | 5 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | mg/l | TM60/PM0 | |
| Total Suspended Solids* | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | mg/l | TM37/PM0 | |

Element Materials Technology

Notification of Deviating Samples

Client Name: Envirologic Ltd
Reference: 1890
Location: Spink
Contact: Pat Breheny

| EMT Job No. | Batch | Sample ID | Depth | EMT Sample No. | Analysis | Reason |
|--|-------|-----------|-------|----------------|----------|--------|
| No deviating sample report results for job 21/5240 | | | | | | |

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.



ALS Environmental Ltd
Torrington Avenue
Coventry
CV4 9GU

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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

16 April 2021

Test Report: COV/2115972/2021

Dear Mr Breheny

Analysis of your sample(s) received on 08 April 2021 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 Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name:

R. Stocks

Title:

Inorganic Team Leader



EMS 675527

OHS 542058

Report Summary

ANALYSED BY

Mr Patrick Breheny
Envirologic
Envirologic Ltd.
78 St Peters Terrace
Howth
Dublin
South Dublin
D13 HO08



Date of Issue: **16 April 2021**

Report Number: **COV/2115972/2021**

Issue **1**

This issue replaces
all previous issues

Job Description: **Micro analysis**

Number of Samples
included in this report **3**

Job Received: **08 April 2021**

Number of Test Results
included in this report **12**

Analysis Commenced: **12 April 2021**

Signed: 

Name: **R. Stocks**

Date: **16 April 2021**

Title: **Inorganic Team Leader**

ALS Environmental Ltd 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.

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ALS Environmental Ltd

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

Page 1 of 5

Certificate of Analysis

ANALYSED BY



Report Number: **COV/2115972/2021**
Laboratory Number: **20311024**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **SW East**
Sample Matrix: **Surface Water**
Sample Date/Time: **08 April 2021**
Sample Received: **08 April 2021**
Analysis Complete: **16 April 2021**

Issue **1**
Sample **1** of **3**

| Test Description | Result | Units | Analysis Date | Accreditation | Method |
|-----------------------------|--------|-----------|---------------|---------------|--------|
| BODS + ATU | <1 | mg/l O2 | 16/04/2021 | N S | SUBCON |
| COD | <5 | mg/l | 16/04/2021 | N S | SUBCON |
| Total Coliforms (Colilert) | 488 | mpn/100ml | 12/04/2021 | N S | SUBCON |
| Faecal Coliforms (Colilert) | 488 | mpn/100ml | 12/04/2021 | N S | SUBCON |

Analyst Comments for 20311024: No Analyst Comment

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: **R. Stocks**

Date: **16 April 2021**

Title: **Inorganic Team Leader**

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
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Page 2 of 5

Certificate of Analysis

ANALYSED BY



Report Number: **COV/2115972/2021**
Laboratory Number: **20311025**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **SW West**
Sample Matrix: **Surface Water**
Sample Date/Time: **08 April 2021**
Sample Received: **08 April 2021**
Analysis Complete: **16 April 2021**

Issue **1**
Sample **2** of **3**

| Test Description | Result | Units | Analysis Date | Accreditation | Method |
|-----------------------------|--------|-----------|---------------|---------------|--------|
| BODS + ATU | <1 | mg/l O2 | 16/04/2021 | N S | SUBCON |
| COD | <5 | mg/l | 16/04/2021 | N S | SUBCON |
| Total Coliforms (Colilert) | 68 | mpn/100ml | 12/04/2021 | N S | SUBCON |
| Faecal Coliforms (Colilert) | 42 | mpn/100ml | 12/04/2021 | N S | SUBCON |

Analyst Comments for 20311025: No Analyst Comment

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: **R. Stocks**

Date: **16 April 2021**

Title: **Inorganic Team Leader**

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2115972/2021**
Laboratory Number: **20311026**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **Outfall**
Sample Matrix: **Surface Water**
Sample Date/Time: **08 April 2021**
Sample Received: **08 April 2021**
Analysis Complete: **16 April 2021**

Issue **1**
Sample **3** of **3**

| Test Description | Result | Units | Analysis Date | Accreditation | Method |
|-----------------------------|--------|-----------|---------------|---------------|--------|
| BODS + ATU | 2 | mg/l O2 | 16/04/2021 | N S | SUBCON |
| COD | <5 | mg/l | 16/04/2021 | N S | SUBCON |
| Total Coliforms (Colilert) | 86 | mpn/100ml | 12/04/2021 | N S | SUBCON |
| Faecal Coliforms (Colilert) | 0 | mpn/100ml | 12/04/2021 | N S | SUBCON |

Analyst Comments for 20311026: No Analyst Comment

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.

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

Signed:

Name: **R. Stocks**

Date: **16 April 2021**

Title: **Inorganic Team Leader**

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Envirollogic Ltd
78 St Peters Terrace
Howth
Co Dublin
Ireland

Attention : Pat Breheny
Date : 13th May, 2021
Your reference : 1890
Our reference : Test Report 21/6737 Batch 1
Location : Spink
Date samples received : 6th May, 2021
Status : Final report
Issue : 1

Three samples were received for analysis on 6th May, 2021 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied. All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Notification of Deviating Samples

Client Name: Envirollogic Ltd
Reference: 1890
Location: Spink
Contact: Pat Breheny

| EMT Job No. | Batch | Sample ID | Depth | EMT Sample No. | Analysis | Reason |
|--|-------|-----------|-------|----------------|----------|--------|
| No deviating sample report results for job 21/6737 | | | | | | |

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.



ALS Environmental Ltd
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www.alsenvironmental.co.uk

Mr Breheny
Envirologic
Envirologic Ltd.
78 St Peters Terrace
Howth
Dublin D13 HO08
South Dublin

14 May 2021

Test Report: COV/2129120/2021

Dear Mr Breheny

Analysis of your sample(s) received on 05 May 2021 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 Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: R. Stocks

Title: Inorganic Team Leader



Report Summary

ANALYSED BY

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



Date of Issue: **14 May 2021**

Report Number: **COV/2129120/2021**

Issue **1**

This issue replaces
all previous issues

Job Description: Micro analysis

Number of Samples
included in this report **3**

Job Received: **05 May 2021**

Number of Test Results
included in this report **12**

Analysis Commenced: **07 May 2021**

Signed:

Name: **R. Stocks**

Date: **14 May 2021**

Title: **Inorganic Team Leader**

ALS Environmental Ltd 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 Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2129120/2021**
Laboratory Number: **20398865**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **Outfall**
Sample Matrix: **Surface Water**
Sample Date/Time: **05 May 2021**
Sample Received: **05 May 2021**
Analysis Complete: **14 May 2021**

Issue **1**
Sample **1** of **3**

| Test Description | Result | Units | Analysis Date | Accreditation | Method |
|----------------------------|--------|-----------|---------------|---------------|--------|
| BODS + ATU | 3 | mg/l O2 | 14/05/2021 | N S | SUBCON |
| COD | 10 | mg/l | 14/05/2021 | N S | SUBCON |
| Total Coliforms (Collert) | 122 | mpn/100ml | 07/05/2021 | N S | SUBCON |
| Faecal Coliforms (Collert) | 6 | mpn/100ml | 07/05/2021 | N S | SUBCON |

Analyst Comments for 20398865:

No Analyst Comment

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.

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

Signed:

Name: **R. Stocks**

Date: **14 May 2021**

Title: **Inorganic Team Leader**

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2129120/2021**
Laboratory Number: **20398866**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **SW East**
Sample Matrix: **Surface Water**
Sample Date/Time: **05 May 2021**
Sample Received: **05 May 2021**
Analysis Complete: **14 May 2021**

Issue **1**
Sample **2** of **3**

| Test Description | Result | Units | Analysis Date | Accreditation | Method |
|-----------------------------|--------|---------------------|---------------|---------------|--------|
| BODS + ATU | <1 | mg/l O ₂ | 14/05/2021 | N S | SUBCON |
| COD | 25 | mg/l | 14/05/2021 | N S | SUBCON |
| Total Coliforms (Colilert) | 1046 | mpn/100ml | 07/05/2021 | N S | SUBCON |
| Faecal Coliforms (Colilert) | 461 | mpn/100ml | 07/05/2021 | N S | SUBCON |

Analyst Comments for 20398866: No Analyst Comment

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.

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

Signed:

Name: **R. Stocks**

Date: **14 May 2021**

Title: **Inorganic Team Leader**

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2129120/2021**
Laboratory Number: **20398867**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **SW West**
Sample Matrix: **Surface Water**
Sample Date/Time: **05 May 2021**
Sample Received: **05 May 2021**
Analysis Complete: **14 May 2021**

Issue **1**
Sample **3** of **3**

| Test Description | Result | Units | Analysis Date | Accreditation | Method |
|-----------------------------|--------|-----------|---------------|---------------|--------|
| BODS + ATU | <1 | mg/l O2 | 14/05/2021 | N S | SUBCON |
| COD | 18 | mg/l | 14/05/2021 | N S | SUBCON |
| Total Coliforms (Colilert) | 1120 | mpn/100ml | 07/05/2021 | N S | SUBCON |
| Faecal Coliforms (Colilert) | 727 | mpn/100ml | 07/05/2021 | N S | SUBCON |

Analyst Comments for 20398867: No Analyst Comment

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.

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

Signed:

Name: **R. Stocks**

Date: **14 May 2021**

Title: **Inorganic Team Leader**

