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Carrigeen Business Park, Clonmel, Co. Tipperary  
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Report No: HYDR-917300323

Document No: EF0011

## CERTIFICATE OF ANALYSIS

<b>Client</b>	<b>Hydro Environmental Services</b> 22 Lower Main Street Dungarvan Co. Waterford	<b>Date Submitted</b>	30/03/2023
		<b>Date Reported</b>	10/04/2023
		<b>Order Number</b>	1604-0
<b>For the Attention of:</b>	Hydro Environmental Services		
<b>Sample Reception</b>	10 sample(s) received in good condition.		
<b>Comments</b>	N/A		

Report Authorised by:

Rosemary Thomas  
Environmental Chemistry Manager

**Conditions:**

1. Results in this report relate only to the items tested
2. Reports may not be reproduced except in full without the approval of ALS Life Sciences Ltd
3. All queries regarding this report should be addressed to the Technical Manager at the above address
4. A \* next to a method reference signifies that ALS Life Sciences Ltd is NOT INAB accredited for this method
5. Results reported as CFU/cm<sup>2</sup> are calculated based on information supplied by customer regarding area swabbed
6. SUBCON\* indicates analysis subcontracted to approved subcontractors who do not hold accreditation for this test
7. SUBCON^ indicates analysis subcontracted to approved subcontractors who hold accreditation for this test
8. Where sampling is undertaken by ALS personnel, sampling activities are outside the scope of INAB accreditation
9. Dil next to a method reference indicates that a dilution of the water sample was undertaken during testing
10. Statement of conformity made against the result does not take into account the uncertainty of measurement associated with the method



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**CERTIFICATE OF ANALYSIS**

**Date Submitted** 30/03/2023  
**Date Reported** 10/04/2023  
**Order Number** 1604-0

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW1 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495400

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	29	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	0.04	mg/l NH3-N	P281
Chloride	25.5	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	0.08	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW2 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495401

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	0.02	mg/l NH3-N	P281
Chloride	35.0	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	0.43	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

Report Authorised by:

*Rosemary Thomas*



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**CERTIFICATE OF ANALYSIS**

**Date Submitted** 30/03/2023  
**Date Reported** 10/04/2023  
**Order Number** 1604-0

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW3 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495402

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	0.04	mg/l NH3-N	P281
Chloride	24.9	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW4 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495403

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	21.1	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

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**CERTIFICATE OF ANALYSIS**

**Date Submitted** 30/03/2023  
**Date Reported** 10/04/2023  
**Order Number** 1604-0

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW5 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495404

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	1	mg/l O2	P280
Ammonia	0.02	mg/l NH3-N	P281
Chloride	25.8	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	0.37	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW6 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495405

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	0.02	mg/l NH3-N	P281
Chloride	27.0	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	0.80	mg/L N	P281
Nitrogen (Total)	1.0	mg/L N	P285

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### CERTIFICATE OF ANALYSIS

**Date Submitted** 30/03/2023  
**Date Reported** 10/04/2023  
**Order Number** 1604-0

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW7 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495406

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	13	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	1	mg/l O2	P280
Ammonia	0.05	mg/l NH3-N	P281
Chloride	25.4	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	0.08	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW8 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495407

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	0.02	mg/l NH3-N	P281
Chloride	28.9	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

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### CERTIFICATE OF ANALYSIS

**Date Submitted** 30/03/2023  
**Date Reported** 10/04/2023  
**Order Number** 1604-0

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW9 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495408

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	0.04	mg/l NH3-N	P281
Chloride	25.9	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	0.91	mg/L N	P281
Nitrogen (Total)	1.3	mg/L N	P285

**Sample Type** Surface Water  
**Client ID** P1604 Tirawley SW10 30.03.23 @ 9AM  
**Date Tested** 31/03/2023  
**ALS ID** 5495409

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	26.7	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	0.27	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

Report Authorised by:

*Rosemary Thomas*



ALS Life Sciences Ltd trading as ALS  
Carrigeen Business Park, Clonmel, Co. Tipperary  
Telephone: +353 (0) 52 617 8100



Report No: HYDR-099200423

Document No: EF0011

## CERTIFICATE OF ANALYSIS

<b>Client</b>	<b>Hydro Environmental Services</b> 22 Lower Main Street Dungarvan Co. Waterford	<b>Date Submitted</b>	20/04/2023
		<b>Date Reported</b>	27/04/2023
		<b>Order Number</b>	P1604
<b>For the Attention of:</b>	Hydro Environmental Services		
<b>Sample Reception</b>	10 sample(s) received in good condition.		
<b>Comments</b>	N/A		

Report Authorised by:

Rosemary Thomas  
Environmental Chemistry Manager

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Report No: HYDR-099200423

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### CERTIFICATE OF ANALYSIS

**Date Submitted** 20/04/2023  
**Date Reported** 27/04/2023  
**Order Number** P1604

**Sample Type** Water  
**Client ID** P1604 TRawley SW 1 08:00am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527550

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	0.24	mg/l P	P207
BOD 5 day Total	1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	28.5	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Water  
**Client ID** P1604 TRawley SW 2 08:30am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527551

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	44.2	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	0.69	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

Report Authorised by:

*Rosemary Thomas*





Report No: HYDR-099200423

Document No: EF0011

**CERTIFICATE OF ANALYSIS**

**Date Submitted** 20/04/2023  
**Date Reported** 27/04/2023  
**Order Number** P1604

**Sample Type** Water  
**Client ID** P1604 TRawley SW 3 08:45am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527552

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	8	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	3	mg/l O2	P280
Ammonia	0.03	mg/l NH3-N	P281
Chloride	28.3	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Water  
**Client ID** P1604 TRawley SW 4 09:00am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527553

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	26.0	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

Report Authorised by:

*Rosemary Thomas*



Report No: HYDR-099200423

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**CERTIFICATE OF ANALYSIS**

**Date Submitted** 20/04/2023  
**Date Reported** 27/04/2023  
**Order Number** P1604

**Sample Type** Water  
**Client ID** P1604 TRawley SW 5 09:30am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527554

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	23.3	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Water  
**Client ID** P1604 TRawley SW 6 10:00am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527555

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	0.02	mg/l NH3-N	P281
Chloride	27.6	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	0.76	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

Report Authorised by:

*Rosemary Thomas*



Report No: HYDR-099200423

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### CERTIFICATE OF ANALYSIS

**Date Submitted** 20/04/2023  
**Date Reported** 27/04/2023  
**Order Number** P1604

**Sample Type** Water  
**Client ID** P1604 TRawley SW 7 10:15am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527556

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	2	mg/l O2	P280
Ammonia	0.02	mg/l NH3-N	P281
Chloride	26.6	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Water  
**Client ID** P1604 TRawley SW 8 10:45am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527557

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	7	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	33.6	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

Report Authorised by:

*Rosemary Thomas*



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### CERTIFICATE OF ANALYSIS

**Date Submitted** 20/04/2023  
**Date Reported** 27/04/2023  
**Order Number** P1604

**Sample Type** Water  
**Client ID** P1604 TRawley SW 9 11:15am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527558

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	25.2	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	0.72	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

**Sample Type** Water  
**Client ID** P1604 TRawley SW 10 11:45am 20/04/2023  
**Date Tested** 21/04/2023  
**ALS ID** 5527559

<u>Test</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>
Suspended Solids	<5	mg / l	P202
Phosphorus	<0.10	mg/l P	P207
BOD 5 day Total	<1	mg/l O2	P280
Ammonia	<0.02	mg/l NH3-N	P281
Chloride	79.6	mg/l Cl	P281
Nitrate	<5.0	mg/l NO3	P281
Nitrite	<0.05	mg/l NO2	P281
Orthophosphate	<0.02	mg/l P	P281
Total Oxidised Nitrogen	<0.25	mg/L N	P281
Nitrogen (Total)	<1.0	mg/L N	P285

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*Rosemary Thomas*