

Appendix A.11.2

Water Quality Monitoring

Annex 1 2015 to 2016 Data

Annex 2 2024 Data

A.11.2 Water Quality Monitoring

Annex 1 2015 to 2016 Data

Annex 1 2015 to 2016

Water Quality Monitoring of Selected Surface Waters for the N6 Galway City Ring Road

The Surface Water Sampling Locations are presented in Figure 1 as follows:
The Laboratory Water Quality Testing was carried out by Henesey Glan Uisce Teo, Na Forbartha, Co. Galway.

- | | |
|-------------------|--|
| 1. Liberty | Sruthán na Libertí |
| 2. Bearna Village | Trusky Stream |
| 3. Cappagh South | Bearna Stream d/s of the Tonabrooky confluence |
| 4. Cappagh North | Bearna Stream d/s of the Tonabrooky confluence |
| 5. Dangan Slip | Corrib River |
| 6. Terryland | TerryLand intak Channel at Jordan's Island |
| 7. Inner Coolagh | Coolagh Lake Inner |
| 8. Outer Coolagh | Coolagh Lake Outer |
| 9. Ballindooley | Ballindooley Lough |

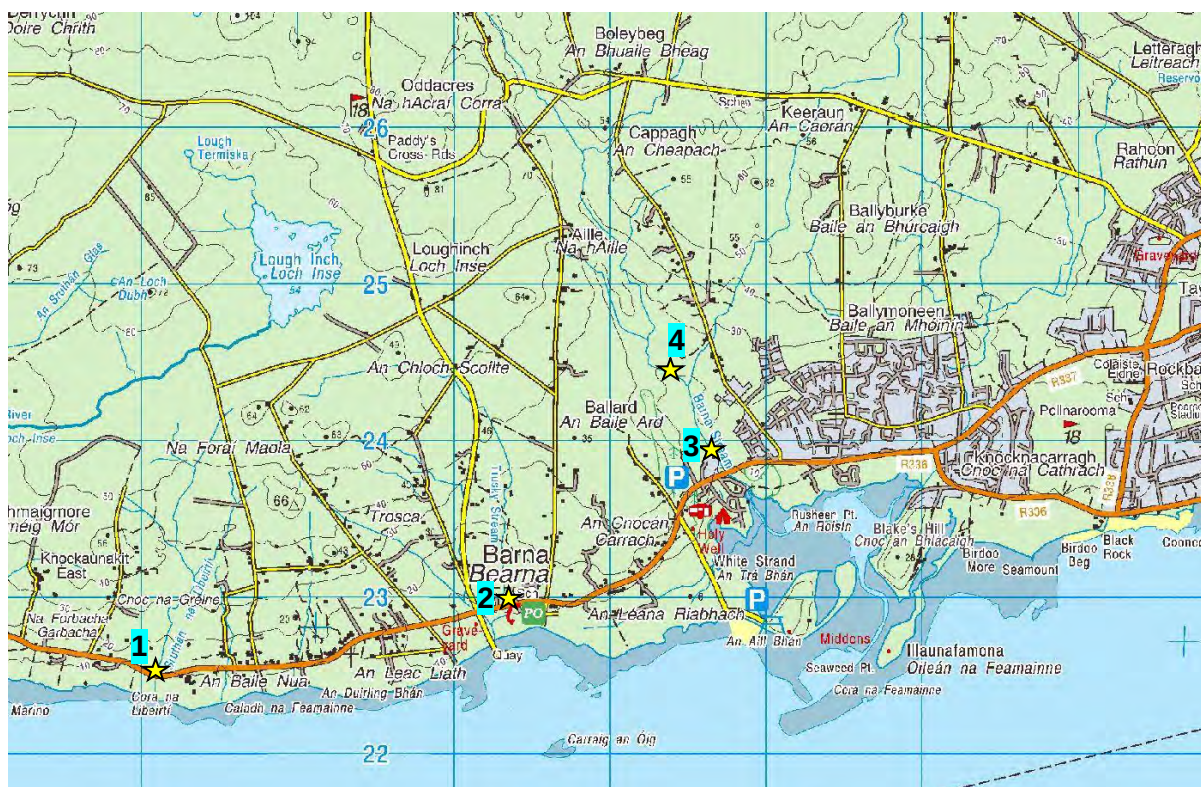


Figure 1a Location of Surface Water Quality Monitoring Sites



Date	Sample Location	pH	suspended solids mg/l	COD mg/l	BOD mg/l	conductivity µS @20°	calcium mg/l	Alkalinity mg/l CaCO3	total hardness mg/l CaCO3
30.11.15	Liberty Stream	7.83	2.6	32	<2.0	227	8.06		57.3
30.11.15	Barna village	7.56	4.7	37	2.1	230	19.3		63.2
30.11.15	Cappagh south	7.46	3.9	27	<2.0	193	15.8		52.4
30.11.15	Cappagh north	7.43	2.2	26	<2.0	175	14.8		43.9
02.12.15	Waterworks	7.77	2.4	24	<2.0	417	44.5		266
30.11.15	Daingean	8.10	8.2	14	<2.0	306	55.6		149
30.11.15	Ballindooley	7.32	1.5	<10	<2.0	592	69.8		302
02.12.15	Inner Coolough	7.72	1.0	12	<2.0	510	41.4		229
04.02.16	Liberty Stream	7.90	1.2	35	<2.0			60	
04.02.16	Barna village	7.76	1.8	38	<2.0			78	
04.02.16	Cappagh south	7.67	2.0	27	<2.0			58	
04.02.16	Cappagh north	7.46	1.6	24	<2.0			50	
03.02.16	Waterworks	8.13	2.2	16	2.1			138	
03.02.16	Daingean	8.24	4.8	18	2.1			164	
03.02.16	Ballindooley	8.19	2.2	15	2.7			206	
03.02.16	Inner Coolough	8.16	<1.0	10	2.1			198	
03.02.16	Outer Coolough	8.20	1.4	10	3.2			202	
19.04.16	Liberty Stream	8.16	<1.0	90	<2.0			66	
19.04.16	Barna village	7.90	<1.0	47	<2.0			102	
19.04.16	Cappagh south	8.01	1.3	33	<2.0			86	
19.04.16	Cappagh north	7.94	1.5	36	2.2			78	
19.04.16	Waterworks	8.40	1.6	31	2.3			108	
19.04.16	Daingean	8.35	1.0	29	<2.0			118	
19.04.16	Ballindooley	7.50	8.0	49	5.8			150	
19.04.16	Inner Coolough	8.17	5.8	28	3.4			200	
19.04.16	Outer Coolough	8.24	3.8	30	3.2			204	

Date	Sample Location	pH	suspended solids mg/l	COD mg/l	BOD mg/l	conductivity µS @20°	calcium mg/l	Alkalinity mg/l CaCO3	total hardness mg/l CaCO3
08.06.16	Liberty Stream	8.02	3.0	42	<2.0			94	
08.06.16	Barna village	7.97	2.4	35	<2.0			92	
08.06.16	Cappagh south	8.02	1.0	37	<2.0			104	
08.06.16	Cappagh north	8.01	1.2	39	<2.0			100	
08.06.16	Waterworks	8.18	3.4	37	<2.0			92	
08.06.16	Daingean	8.50	2.8	37	<2.0			92	
08.06.16	Ballindooley	8.20	1.4	33	<2.0			148	
08.06.16	Inner Coolough	8.18	2.8	32	2.7			182	
08.06.16	Outer Coolough	8.26	1.8	32	<2.0			164	
24.08.16	Liberty Stream	7.88	2.1	59	<2.0			70	
24.08.16	Barna village	7.68	1.9	58	2.0			98	
24.08.16	Cappagh south	7.89	2.7	40	<2.0			80	
24.08.16	Cappagh north	7.83	3.4	51	<2.0			68	
25.08.16	Waterworks	8.33	1.0	15	<2.0			90	
25.08.16	Daingean	8.38	1.4	15	<2.0			100	
25.08.16	Ballindooley	8.42	5.3	29	<2.0			138	
25.08.16	Inner Coolough	8.11	4.4	7	<2.0			218	
25.08.16	Outer Coolough	8.32	<1.0	12	<2.0			168	

Date	Sample Location	Ammonia mg/l N	Nitrate mg/l N	Nitrite mg/l N	Total N mg/l N	Phosphate mg/l P	Total P mg/l P	faecal coliforms cfu/100ml	total coliforms cfu/100ml
30.11.15	Liberty Stream	0.025	0.505	0.005	0.901	0.01	0.017	2400	3200
30.11.15	Barna village	0.027	0.717	0.005	1.139	0.038	0.075	2700	4800
30.11.15	Cappagh south	0.026	0.502	0.003	0.84	0.009	0.017	2600	3700
30.11.15	Cappagh north	0.026	0.406	0.003	0.758	0.011	0.023	6500	8800
02.12.15	Waterworks	0.01	0.521	0.006	0.897	0.003	0.023	<1	0
30.11.15	Daingean	0.08	0.583	0.006	0.882	0.003	0.013	700	2100
30.11.15	Ballindooley	0.042	1.848	0.001	1.919	0.058	0.06	500	1600
02.12.15	Inner Coolough	0.014	0.142	0.001	0.41	<0.003	0.021	<1	0
04.02.16	Liberty Stream	0.018	0.37	0.004		0.008		70	70
04.02.16	Barna village	0.023	0.59	0.006		0.031		114	114
04.02.16	Cappagh south	0.014	0.427	0.003		0.003		64	64
04.02.16	Cappagh north	0.018	0.319	0.004		0.003		146	146
03.02.16	Waterworks	0.018	0.425	0.003		0.004		68	68
03.02.16	Daingean	0.017	0.49	0.005		0.006		63	63
03.02.16	Ballindooley	0.017	0.151	0.003		0.028		6	6
03.02.16	Inner Coolough	0.037	0.479	0.003		0.026		29	29
03.02.16	Outer Coolough	0.039	0.499	0.004		0.022		27	27
19.04.16	Liberty Stream	0.011	0.207	0.003		0.008		42	42
19.04.16	Barna village	0.019	0.59	0.003		0.026		68	68
19.04.16	Cappagh south	0.014	0.333	0.003		0.003		46	46
19.04.16	Cappagh north	0.013	0.295	0.003		0.005		35	35
19.04.16	Waterworks	0.085	0.296	0.002		<0.003		2	2
19.04.16	Daingean	0.061	0.25	0.002		<0.003		0	0
19.04.16	Ballindooley	0.184	0.016	0.001		0.03		0	0
19.04.16	Inner Coolough	0.037	0.302	0.003		<0.003		12	12
19.04.16	Outer Coolough	0.057	0.292	0.003		<0.003		0	0

Date	Sample Location	Ammonia mg/l N	Nitrate mg/l N	Nitrite mg/l N	Total N mg/l N	Phosphate mg/l P	Total P mg/l P	faecal coliforms cfu/100ml	total coliforms cfu/100ml
08.06.16	Liberty Stream	0.016	0.115	0.003		0.013		42	42
08.06.16	Barna village	0.068	1.42	0.01		0.092		136est	136est
08.06.16	Cappagh south	0.019	0.396	0.002		0.004		590	590
08.06.16	Cappagh north	0.018	0.465	0.002		0.006		630	630
08.06.16	Waterworks	0.037	0.024	0.002		0.003		99	99
08.06.16	Daingean	0.026	0.014	0.001		<0.003		87	87
08.06.16	Ballindooley	0.01	0.01	0.001		<0.003		48	48
08.06.16	Inner Coolough	0.014	0.025	<0.001		0.003		64	64
08.06.16	Outer Coolough	0.014	0.009	0.003		<0.003		0	0
24.08.16	Liberty Stream	0.014	0.213	0.006		0.011		69	69
24.08.16	Barna village	0.011	0.4	0.005		0.052		158est	158est
24.08.16	Cappagh south	0.014	0.223	0.005		0.005		98	98
24.08.16	Cappagh north	0.014	0.208	0.007		0.006		98	98
25.08.16	Waterworks	0.018	0.009	0.002		<0.003		0	0
25.08.16	Daingean	0.027	0.015	0.002		<0.003		30	30
25.08.16	Ballindooley	0.078	0.008	0.002		<0.003		21	21
25.08.16	Inner Coolough	0.014	0.676	0.002		<0.003		100	100
25.08.16	Outer Coolough	0.039	0.018	0.002		<0.003		90	90

Date	Sample Location	sulphate mg/l	chloride mg/l	sodium mg/l	potassium mg/l	magnesium mg/l	zinc mg/l	lead mg/l	copper mg/l
30.11.15	Liberty Stream	<7.0		9		1.4	<0.005		0.005
30.11.15	Barna village	<7.0		12		2.8	<0.005		<0.001
30.11.15	Cappagh south	<7.0		12		2.3	<0.005		<0.001
30.11.15	Cappagh north	<7.0		12		2.3	<0.005		<0.001
02.12.15	Waterworks	<7.0		18		1.6	<0.005		0.004
30.11.15	Daingean	<7.0		12		3.2	<0.005		<0.001
30.11.15	Ballindooley	<7.0		12		3.7	<0.005		0.004
02.12.15	Inner Coolough	18.7		12		1.8	<0.005		0.004
04.02.16	Liberty Stream	<7.0	45.2	26.3	1.72	2.5	<0.005	<0.006	0.004
04.02.16	Barna village	9.87	43.3	24.1	2.48	2.6	<0.005	<0.006	0.017
04.02.16	Cappagh south	9.24	43.3	21.2	1.72	2.1	<0.005	<0.006	0.002
04.02.16	Cappagh north	<7.0	43.3	23.1	1.44	2.1	<0.005	<0.006	<0.001
03.02.16	Waterworks	<7.0	23.5	14.3	<5	2.3	<0.005	<0.006	<0.001
03.02.16	Daingean	<7.0	21.7	13.7	<5	2.4	<0.005	<0.006	<0.001
03.02.16	Ballindooley	<7.0	34.3	23.5	4.17	3.1	<0.005	<0.006	<0.001
03.02.16	Inner Coolough	20.8	34.3	20.7	1.96	2.4	<0.005	<0.006	0.001
03.02.16	Outer Coolough	22.2	32.5	19.5	1.89	2.5	<0.005	<0.006	<0.001
19.04.16	Liberty Stream	<7.0	37.9	30.2	0.96	3.28	<0.005	<0.004	0.003
19.04.16	Barna village	22	41.5	31.9	1.95	3.98	<0.005	<0.004	0.022
19.04.16	Cappagh south	14.3	36.1	27.1	1.61	3.27	<0.005	<0.004	0.002
19.04.16	Cappagh north	<7.0	32.5	26.2	1.12	3.18	<0.005	<0.004	0.001
19.04.16	Waterworks	<7.0	27.1	16.9	0.97	3.79	<0.005	<0.004	0.001
19.04.16	Daingean	<7.0	28.9	17.9	0.98	2.93	<0.005	<0.004	0.001
19.04.16	Ballindooley	<7.0	39.7	26.9	3.91	3.56	<0.005	<0.004	0.001
19.04.16	Inner Coolough	13.5	43.3	23.9	1.6	2.95	<0.005	<0.004	0.001
19.04.16	Outer Coolough	26.7	27.1	27.5	1.79	3.4	<0.005	<0.004	0.001

Date	Sample Location	sulphate mg/l	chloride mg/l	sodium mg/l	potassium mg/l	magnesium mg/l	zinc mg/l	lead mg/l	copper mg/l
08.06.16	Liberty Stream	28.9	63	33	1	4	<0.005	<0.0005	<0.001
08.06.16	Barna village	40.5	43.2	32	4	4	<0.005	<0.0005	0.025
08.06.16	Cappagh south	18.5	32.4	26	2	4	<0.005	<0.0005	<0.001
08.06.16	Cappagh north	16.1	39.6	25	2	4	<0.005	<0.0005	<0.001
08.06.16	Waterworks	<7.0	23.4	19	1	3	<0.005	<0.0005	<0.001
08.06.16	Daingean	<7.0	25.2	18	1	3	<0.005	<0.0005	<0.001
08.06.16	Ballindooley	<7.0	36.9	26	3	3	<0.005	<0.0005	<0.001
08.06.16	Inner Coolough	24	35.1	25	2	3	<0.005	<0.0005	<0.001
08.06.16	Outer Coolough	14.2	34.2	23	2	3	<0.005	<0.0005	<0.001
24.08.16	Liberty Stream	<7.0	36.1	26	1	3	<0.005	<0.0005	<0.001
24.08.16	Barna village	46.1	34.3	25	3	4	<0.005	<0.0005	0.01
24.08.16	Cappagh south	<7.0	36.1	22	2	3	<0.005	<0.0005	<0.001
24.08.16	Cappagh north	<7.0	25.3	21	2	3	<0.005	<0.0005	<0.001
25.08.16	Waterworks	<7.0	19.9	14	1	3	<0.005	<0.0005	<0.001
25.08.16	Daingean	<7.0	30.7	14	1	3	<0.005	<0.0005	<0.001
25.08.16	Ballindooley	<7.0	36.1	19	2	3	<0.005	<0.0005	<0.001
25.08.16	Inner Coolough	18.6	30.7	17	2	3	<0.005	<0.0005	<0.001
25.08.16	Outer Coolough	25.9	37.9	17	2	3	<0.005	<0.0005	<0.001

Date	Sample Location	iron mg/l	manganese mg/l	chromium µg/l	cadmium µg/l	Extractable hydrocarbons mg/l	TDS mg/l	PAH total ng/l	turbidity NTU
30.11.15	Liberty Stream	0.027	<0.005			62			2.13
30.11.15	Barna village	0.098	<0.005			44			3.01
30.11.15	Cappagh south	0.082	<0.005			57			2.1
30.11.15	Cappagh north	0.088	<0.005			78			1.8
02.12.15	Waterworks	0.053	0.032			37			0.3
30.11.15	Daingean	0.031	<0.005			55			6.58
30.11.15	Ballindooley	0.026	<0.005			21			1.08
02.12.15	Inner Coolough	0.011	0.005			63			0.25
04.02.16	Liberty Stream	0.202	<0.005	<0.5			202		
04.02.16	Barna village	0.333	<0.005	0.6			196		
04.02.16	Cappagh south	0.198	<0.005	<0.5			160		
04.02.16	Cappagh north	0.201	0.006	<0.5			160		
03.02.16	Waterworks	0.148	<0.005	<0.5			166		
03.02.16	Daingean	0.178	<0.005	<0.5			200		
03.02.16	Ballindooley	0.178	<0.005	<0.5			264		
03.02.16	Inner Coolough	0.163	<0.005	<0.5			294		
03.02.16	Outer Coolough	0.188	<0.005	<0.5			306		
19.04.16	Liberty Stream	0.17	0.009	<0.9	<0.09		182		
19.04.16	Barna village	0.267	0.022	<0.9	<0.09		216		
19.04.16	Cappagh south	0.316	0.044	<0.9	<0.09		178		
19.04.16	Cappagh north	0.457	0.045	<0.9	<0.09		154		
19.04.16	Waterworks	0.058	0.008	<0.9	<0.09		158		
19.04.16	Daingean	0.053	0.006	<0.9	<0.09		158		
19.04.16	Ballindooley	0.035	0.009	<0.9	<0.09		254		
19.04.16	Inner Coolough	0.022	0.006	<0.9	<0.09		310		
19.04.16	Outer Coolough	0.011	0.004	<0.9	<0.09		318		

Date	Sample Location	iron mg/l	manganese mg/l	chromium µg/l	cadmium µg/l	Extractable hydrocarbons mg/l	TDS mg/l	PAH total ng/l	turbidity NTU
08.06.16	Liberty Stream	0.026	<0.005	<0.5	<0.5		202		
08.06.16	Barna village	0.015	<0.005	<0.5	<0.5		208		
08.06.16	Cappagh south	0.05	0.015	<0.5	<0.5		196		
08.06.16	Cappagh north	0.046	0.007	<0.5	<0.5		266		
08.06.16	Waterworks	0.078	0.013	<0.5	<0.5		198		
08.06.16	Daingean	0.059	0.008	<0.5	<0.5		196		
08.06.16	Ballindooley	<0.010	<0.005	<0.5	<0.5		248		
08.06.16	Inner Coolough	<0.010	<0.005	<0.5	<0.5		296		
08.06.16	Outer Coolough	0.013	0.007	<0.5	<0.5		270		
24.08.16	Liberty Stream	0.336	0.019	<0.5	<0.5		164		
24.08.16	Barna village	0.367	0.013	<0.5	<0.5		220		
24.08.16	Cappagh south	0.537	0.035	<0.5	<0.5		158		
24.08.16	Cappagh north	0.712	0.033	<0.5	<0.5		156		
25.08.16	Waterworks	0.039	0.008	<0.5	<0.5	53	144	5	
25.08.16	Daingean	0.029	0.01	<0.5	<0.5	106	146	4	
25.08.16	Ballindooley	<0.010	<0.005	<0.5	<0.5	197	224	8	
25.08.16	Inner Coolough	<0.010	<0.005	<0.5	<0.5	70	280	8	
25.08.16	Outer Coolough	<0.010	<0.005	<0.5	<0.5	134	250	17	

Hydro Environmental Ltd.,
4, Caisel Riada,
Clarinbridge,
Co. Galway

N6 sampling sites:

November 2015

Table 1.

Date	Sample	pH	conductivity	Turbidity*	suspended solids	COD	BOD	Sulphate
			µS @20°	NTU	mg/l	mg/l	mg/l	mg/l
30.11.15	1	7.83	227	2.1	2.6	32	<2.0	<7.0
30.11.15	2	7.56	230	3.0	4.7	37	2.1	<7.0
30.11.15	3	7.46	193	2.1	3.9	27	<2.0	<7.0
30.11.15	4	7.43	175	1.8	2.2	26	<2.0	<7.0
30.11.15	5	8.10	306	6.6	8.2	14	<2.0	<7.0
02.12.15	6	7.72	510	0.25	1.0	12	<2.0	18.7
02.12.15	7	7.77	417	0.30	2.4	24	<2.0	<7.0
30.11.15	8	7.32	592	1.1	1.5	<10	<2.0	<7.0

Table 2.

Date	Sample	Ammonia	Nitrate	Nitrite	Total N*	Phosphate	Total P*
		mg/l N	mg/l N	mg/l N	mg/l N	mg/l P	mg/l P
30.11.15	1	0.025	0.505	0.005	0.901	0.010	0.017
30.11.15	2	0.027	0.717	0.005	1.139	0.038	0.075
30.11.15	3	0.026	0.502	0.003	0.840	0.009	0.017
30.11.15	4	0.026	0.406	0.003	0.758	0.011	0.023
30.11.15	5	0.080	0.583	0.006	0.882	0.003	0.013
02.12.15	6	0.014	0.142	0.001	0.410	<0.003	0.021
02.12.15	7	0.010	0.521	0.006	0.897	0.003	0.023
30.11.15	8	0.042	1.848	0.001	1.919	0.058	0.060

Test methods. The following methods were used for sample analysis:

pH: Method No. 12 Revision No. 3
Conductivity: Method No. 19 Revision No. 0
Phosphate : Method No. 5 Revision No. 9
Ammonia : Method No. 2 Rev No. 012
Nitrite : Method No. 10 Rev No. 004
Nitrate : Method No. 11 Rev No. 003
BOD: Method No. 4 Revision No. 12
Suspended Solids: Method No. 7 Revision No. 4
COD: Method No. 13 Revision No. 4
Sulphate (as SO₄) : Method No. 14 Revision No. 2

*not accredited

SIGNED Mary Hensey
Mary Hensey M.Sc.

DATE 3-2-16

This report relates only to the samples tested.

This report must not be reproduced, except in full, without the approval of Hensey Glan-Uisce Teo.



CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 280070
 Date of Receipt : 01/12/2015
 Start Date of Analysis : 01/12/2015
 Date of Report : 28/01/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
638929	TLN 1	Total Coliforms (Filtration)	R	3,200	cfu/100ml
		Copper, total	R	5	ug/l
		Sodium, total	R	9	mg/l
		Iron, total	R	27	ug/l
		Total Hardness (Kone)	R	57.3	mg/l CaCO ₃
		Calcium, total	S	8.06	mg/l
		Faecal Coliforms (Filtration)	R	2,400	cfu/100ml
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	62 ** Unknown Pattern	ug/l
		Magnesium, total (in water)	S	1.4	mg/l

** Note: The comment expressed here is an interpretation and is not INAB accredited



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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* Location of analysis: R=Ros Muc, M=MedPharma, S=Subcontracted.

It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 280071
Date of Receipt : 01/12/2015
Start Date of Analysis : 01/12/2015
Date of Report : 28/01/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
638930	TLN 2	Copper, total	R	<1	ug/l
		Sodium, total	R	12	mg/l
		Iron, total	R	98	ug/l
		Total Hardness (Kone)	R	63.2	mg/l CaCO3
		Calcium, total	S	19.3	mg/l
		Faecal Coliforms (Filtration)	R	2,700	cfu/100ml
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Total Coliforms (Filtration) (Environmental Waters)	R	4,800	cfu/100ml
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	44 ** Unknown Pattern	ug/l
		Magnesium, total (in water)	S	2.8	mg/l

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 280073
 Date of Receipt : 01/12/2015
 Start Date of Analysis : 01/12/2015
 Date of Report : 28/01/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
638932	TLN 3	Copper, total	R	<1	ug/l
		Sodium, total	R	12	mg/l
		Iron, total	R	82	ug/l
		Total Hardness (Kone)	R	52.4	mg/l CaCO3
		Calcium, total	S	15.8	mg/l
		Faecal Coliforms (Filtration)	R	2,600	cfu/100ml
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Total Coliforms (Filtration) (Environmental Waters)	R	3,700	cfu/100ml
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	57 ** Unknown Pattern	ug/l
		Magnesium, total (in water)	S	2.3	mg/l

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 280074
 Date of Receipt : 01/12/2015
 Start Date of Analysis : 01/12/2015
 Date of Report : 28/01/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
638933	TLN 4	Copper, total	R	<1	ug/l
		Sodium, total	R	12	mg/l
		Iron, total	R	88	ug/l
		Total Hardness (Kone)	R	43.9	mg/l CaCO ₃
		Calcium, total	S	14.8	mg/l
		Faecal Coliforms (Filtration)	R	6,500	cfu/100ml
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Total Coliforms (Filtration) (Environmental Waters)	R	8,800	cfu/100ml
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	78 ** Unknown Pattern	ug/l
		Magnesium, total (in water)	S	2.3	mg/l

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 280076
 Date of Receipt : 01/12/2015
 Start Date of Analysis : 01/12/2015
 Date of Report : 28/01/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
638935	TLN 5	Copper, total	R	<1	ug/l
		Sodium, total	R	12	mg/l
		Iron, total	R	31	ug/l
		Total Hardness (Kone)	R	149	mg/l CaCO3
		Faecal Coliforms (Filtration)	R	700	cfu/100ml
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Total Coliforms (Filtration) (Environmental Waters)	R	2,100	cfu/100ml
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	55 ** Unknown Pattern	ug/l
		Calcium, total (in water)	S	55.6	mg/l
		Magnesium, total (in water)	S	3.2	mg/l

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Environmental
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It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismegmore
Furbo
Co. Galway

Report No. : 280247
Date of Receipt : 02/12/2015
Start Date of Analysis : 02/12/2015
Date of Report : 28/01/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
639230	TLN 6	Copper, total	R	4	ug/l
		Sodium, total	R	12	mg/l
		Iron, total	R	11	ug/l
		Total Hardness (Kone)	R	229	mg/l CaCO ₃
		Faecal Coliforms (Filtration)	R	< 1	cfu/100ml
		Manganese, total	R	5	ug/l
		Zinc, total	R	<5	ug/l
		Total Coliforms (Filtration) (Environmental Waters)	R	0	cfu/100ml
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	63 ** Unknown Pattern	ug/l
		Calcium, total (in water)	S	41.4	mg/l
		Magnesium, total (in water)	S	1.8	mg/l

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Barbara Lee

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Environmental
Scientist

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It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 280248
Date of Receipt : 02/12/2015
Start Date of Analysis : 02/12/2015
Date of Report : 28/01/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
639231	TLN 7	Copper, total	R	4	ug/l
		Sodium, total	R	18	mg/l
		Iron, total	R	53	ug/l
		Total Hardness (Kone)	R	266	mg/l CaCO3
		Faecal Coliforms (Filtration)	R	< 1	cfu/100ml
		Manganese, total	R	32	ug/l
		Zinc, total	R	<5	ug/l
		Total Coliforms (Filtration) (Environmental Waters)	R	0	cfu/100ml
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	37 ** Unknown Pattern	ug/l
		Calcium, total (in water)	S	44.5	mg/l
		Magnesium, total (in water)	S	1.6	mg/l

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Environmental
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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismegmore
Furbo
Co. Galway

Report No. : 280077
Date of Receipt : 01/12/2015
Start Date of Analysis : 01/12/2015
Date of Report : 28/01/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
638936	TLN 8	Copper, total	R	4	ug/l
		Sodium, total	R	12	mg/l
		Iron, total	R	26	ug/l
		Total Hardness (Kone)	R	302	mg/l CaCO3
		Faecal Coliforms (Filtration)	R	500	cfu/100ml
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Total Coliforms (Filtration) (Environmental Waters)	R	1,600	cfu/100ml
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	21 ** Unknown Pattern	ug/l
		Calcium, total (in water)	S	69.8	mg/l
		Magnesium, total (in water)	S	3.7	mg/l

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It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

Hydro Environmental Ltd.,
4, Caisel Riada,
Clarinbridge,
Co. Galway

N6 sampling sites:

February 2016

Table 1.

Date	Sample	Temperature	pH	suspended solids	TDS*	COD	BOD	Alkalinity*
		°C		mg/l	mg/l	mg/l	mg/l	mg/l CaCO ₃
04.02.16	Liberty Stream	8.1	7.90	1.2	202	35	<2.0	60
04.02.16	Barna village	8.5	7.76	1.8	196	38	<2.0	78
04.02.16	Cappagh south	8.5	7.67	2.0	160	27	<2.0	58
04.02.16	Cappagh north	8.6	7.46	1.6	160	24	<2.0	50
03.02.16	Waterworks		8.13	2.2	166	16	2.1	138
03.02.16	Daingean		8.24	4.8	200	18	2.1	164
03.02.16	Ballindooley		8.19	2.2	264	15	2.7	206
03.02.16	Inner Coolough		8.16	<1.0	294	10	2.1	198
03.02.16	Outer Coolough		8.20	1.4	306	10	3.2	202

Table 2.

Date	Sample	Ammonia	Nitrate	Nitrite	Phosphate	sulphate	chloride
		mg/l N	mg/l N	mg/l N	mg/l P	mg/l	mg/l
04.02.16	Liberty Stream	0.018	0.370	0.004	0.008	<7.0	45.2
04.02.16	Barna village	0.023	0.590	0.006	0.031	9.87	43.3
04.02.16	Cappagh south	0.014	0.427	0.003	0.003	9.24	43.3
04.02.16	Cappagh north	0.018	0.319	0.004	0.003	<7.0	43.3
03.02.16	Waterworks	0.018	0.425	0.003	0.004	<7.0	23.5
03.02.16	Daingean	0.017	0.490	0.005	0.006	<7.0	21.7
03.02.16	Ballindooley	0.017	0.151	0.003	0.028	<7.0	34.3
03.02.16	Inner Coolough	0.037	0.479	0.003	0.026	20.8	34.3
03.02.16	Outer Coolough	0.039	0.499	0.004	0.022	22.2	32.5

Test methods. The following methods were used for sample analysis:

pH: Method No. 12 Revision No. 3
Phosphate : Method No. 5 Revision No. 9
Ammonia : Method No. 2 Rev No. 012
Nitrite : Method No. 10 Rev No. 004
Nitrate : Method No. 11 Rev No. 003
BOD: Method No. 4 Revision No. 12
Suspended Solids: Method No. 7 Revision No. 4
COD: Method No. 13 Revision No. 4
Chloride : Method No. 9 Revision No. 3
Sulphate (as SO₄) : Method No. 14 Revision No. 2

*not accredited

SIGNED.....
Mary Hensey M.Sc.

DATE...16-3-16...

This report relates only to the samples tested.

This report must not be reproduced, except in full, without the approval of Hensey Glan-Uisce Teo.



CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 285762
 Date of Receipt : 05/02/2016
 Start Date of Analysis : 05/02/2016
 Date of Report : 23/02/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651927	TLN 1	Copper, total	R	4	ug/l
		Iron, total	R	202	ug/l
		Potassium, total (in water)	S	1.72	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		E coli (Filtration) (Environmental Waters)	R	70	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	70	cfu/100ml
		Sodium, total (potable water)	S	26.3	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	2.5	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismearmore
Furbo
Co. Galway

Report No. : 285763
Date of Receipt : 05/02/2016
Start Date of Analysis : 05/02/2016
Date of Report : 23/02/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651928	TLN 2	Copper, total	R	17	ug/l
		Iron, total	R	333	ug/l
		Potassium, total (in water)	S	2.48	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	0.6	ug/l
		E coli (Filtration) (Environmental Waters)	R	114	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	114	cfu/100ml
		Sodium, total (potable water)	S	24.1	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	2.6	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 285764
 Date of Receipt : 05/02/2016
 Start Date of Analysis : 05/02/2016
 Date of Report : 23/02/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651929	TLN 3	Copper, total	R	2	ug/l
		Iron, total	R	198	ug/l
		Potassium, total (in water)	S	1.72	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		E coli (Filtration) (Environmental Waters)	R	64	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	64	cfu/100ml
		Sodium, total (potable water)	S	21.2	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	2.1	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismearmore
 Furbo
 Co. Galway

Report No. : 285765
 Date of Receipt : 05/02/2016
 Start Date of Analysis : 05/02/2016
 Date of Report : 23/02/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651930	TLN 4	Copper, total	R	<1	ug/l
		Iron, total	R	201	ug/l
		Potassium, total (in water)	S	1.44	mg/l
		Manganese, total	R	6	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		E coli (Filtration) (Environmental Waters)	R	146	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	146	cfu/100ml
		Sodium, total (potable water)	S	23.1	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	2.1	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismegmore
Furbo
Co. Galway

Report No. : 285647
Date of Receipt : 04/02/2016
Start Date of Analysis : 04/02/2016
Date of Report : 23/02/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651559	TC 1	Copper, total	R	<1	ug/l
		Iron, total	R	148	ug/l
		Potassium, total (in water)	S	1.19	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		E coli (Filtration) (Environmental Waters)	R	68	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	68	cfu/100ml
		Sodium, total (potable water)	S	14.3	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	2.3	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 285648
 Date of Receipt : 04/02/2016
 Start Date of Analysis : 04/02/2016
 Date of Report : 23/02/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651560	TC 2	Copper, total	R	<1	ug/l
		Iron, total	R	178	ug/l
		Potassium, total (in water)	S	1.37	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		E coli (Filtration) (Environmental Waters)	R	63	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	63	cfu/100ml
		Sodium, total (potable water)	S	13.7	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	2.4	mg/l



Approved by:

Barbara Lee

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Environmental
Scientist

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It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismegmore
Furbo
Co. Galway

Report No. : 285649
Date of Receipt : 04/02/2016
Start Date of Analysis : 04/02/2016
Date of Report : 23/02/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651561	TC 3	Copper, total	R	<1	ug/l
		Iron, total	R	178	ug/l
		Potassium, total (in water)	S	4.17	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		E coli (Filtration) (Environmental Waters)	R	6	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	6	cfu/100ml
		Sodium, total (potable water)	S	23.5	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	3.1	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 285650
 Date of Receipt : 04/02/2016
 Start Date of Analysis : 04/02/2016
 Date of Report : 23/02/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651562	TC 4	Copper, total	R	1	ug/l
		Iron, total	R	163	ug/l
		Potassium, total (in water)	S	1.96	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		E coli (Filtration) (Environmental Waters)	R	29	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	29	cfu/100ml
		Sodium, total (potable water)	S	20.7	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	2.4	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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* Location of analysis: R=Ros Muc, M=MedPharma, S=Subcontracted.

It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 285651
 Date of Receipt : 04/02/2016
 Start Date of Analysis : 04/02/2016
 Date of Report : 23/02/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
651563	TC 5	Copper, total	R	<1	ug/l
		Iron, total	R	188	ug/l
		Potassium, total (in water)	S	1.89	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		E coli (Filtration) (Environmental Waters)	R	27	cfu/100ml
		Total Coliforms (Filtration) (Environmental Waters)	R	27	cfu/100ml
		Sodium, total (potable water)	S	19.5	mg/l
		Lead, total (in water)	S	<0.006	mg/l
		Magnesium, total (in water)	S	2.5	mg/l



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Barbara Lee

Barbara Lee
Environmental
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Hydro Environmental Ltd.,
4, Caisel Riada,
Clarinbridge,
Co. Galway

N6 sampling sites:

April 2016

Table 1.

Date	Sample	Temperature	pH	suspended solids	TDS*	COD	BOD	Alkalinity*
		°C		mg/l	mg/l	mg/l	mg/l	mg/l CaCO ₃
19.04.16	Liberty Stream	9.0	8.16	<1.0	182	90	<2.0	66
19.04.16	Barna village	9.1	7.90	<1.0	216	47	<2.0	102
19.04.16	Cappagh south	9.5	8.01	1.3	178	33	<2.0	86
19.04.16	Cappagh north	10.0	7.94	1.5	154	36	2.2	78
19.04.16	Waterworks		8.40	1.6	158	31	2.3	108
19.04.16	Daingean		8.35	1.0	158	29	<2.0	118
19.04.16	Ballindooley		7.50	8.0	254	49	5.8	150
19.04.16	Inner Coolough		8.17	5.8	310	28	3.4	200
19.04.16	Outer Coolough		8.24	3.8	318	30	3.2	204

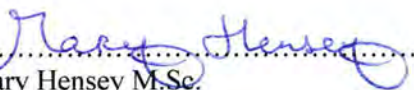
Table 2.

Date	Sample	Ammonia	Nitrate	Nitrite	Phosphate	sulphate	chloride
		mg/l N	mg/l N	mg/l N	mg/l P	mg/l	mg/l
19.04.16	Liberty Stream	0.011	0.207	0.003	0.008	<7.0	37.9
19.04.16	Barna village	0.019	0.590	0.003	0.026	22	41.5
19.04.16	Cappagh south	0.014	0.333	0.003	0.003	14.3	36.1
19.04.16	Cappagh north	0.013	0.295	0.003	0.005	<7.0	32.5
19.04.16	Waterworks	0.085	0.296	0.002	<0.003	<7.0	27.1
19.04.16	Daingean	0.061	0.250	0.002	<0.003	<7.0	28.9
19.04.16	Ballindooley	0.184	0.016	0.001	0.030	<7.0	39.7
19.04.16	Inner Coolough	0.037	0.302	0.003	<0.003	13.5	43.3
19.04.16	Outer Coolough	0.057	0.292	0.003	<0.003	26.7	27.1

Test methods. The following methods were used for sample analysis:

pH: Method No. 12 Revision No. 3
Phosphate : Method No. 5 Revision No. 9
Ammonia : Method No. 2 Rev No. 012
Nitrite : Method No. 10 Rev No. 004
Nitrate : Method No. 11 Rev No. 003
BOD: Method No. 4 Revision No. 12
Suspended Solids: Method No. 7 Revision No. 4
COD: Method No. 13 Revision No. 4
Chloride : Method No. 9 Revision No. 3
Sulphate (as SO₄) : Method No. 14 Revision No. 2

*not accredited

SIGNED.....
Mary Hensey M.Sc.

DATE..31-5-16..

This report relates only to the samples tested.

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 292906
Date of Receipt : 19/04/2016
Start Date of Analysis : 19/04/2016
Date of Report : 18/05/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
668678	TCN 1 19/04/16	E coli (Filtration)	R	42	cfu/100ml
		Total Coliforms (Filtration)	R	42	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	170	ug/l
		Manganese Total 10 days TAT	S	9.39	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	3.28	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	0.96	mg/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	30.2	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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* Location of analysis: R=Ros Muc, M=MedPharma, S=Subcontracted.

It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 292914
 Date of Receipt : 19/04/2016
 Start Date of Analysis : 19/04/2016
 Date of Report : 18/05/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
668686	TCN 2 19/04/16	E coli (Filtration)	R	68	cfu/100ml
		Total Coliforms (Filtration)	R	68	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	267	ug/l
		Manganese Total 10 days TAT	S	22	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	22.3	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	1.95	mg/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	31.9	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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Complete Laboratory Solutions

Complete Laboratory Solutions

[Tel] 091 574355

[Fax] 091 574356

[Email] services@cls.ie

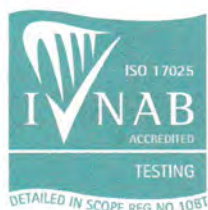
[web] www.cls.ie

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 292912
Date of Receipt : 19/04/2016
Start Date of Analysis : 19/04/2016
Date of Report : 18/05/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
668687	TCN 3 19/04/16	E coli (Filtration)	R	46	cfu/100ml
		Total Coliforms (Filtration)	R	46	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	316	ug/l
		Manganese Total 10 days TAT	S	43.7	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	1.45	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	1.61	mg/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	27.1	mg/l



Approved by:

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Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 292913
Date of Receipt : 19/04/2016
Start Date of Analysis : 19/04/2016
Date of Report : 18/05/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
668688	TCN 4 19/04/16	E coli (Filtration)	R	35	cfu/100ml
		Total Coliforms (Filtration)	R	35	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	457	ug/l
		Manganese Total 10 days TAT	S	45	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	1.09	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	1.12	mg/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	26.2	mg/l



Approved by:

Barbara Lee

**Barbara Lee
Environmental
Scientist**

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 292915
 Date of Receipt : 19/04/2016
 Start Date of Analysis : 19/04/2016
 Date of Report : 18/05/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
668689	TCN 5 19/04/16	E coli (Filtration)	R	2	cfu/100ml
		Total Coliforms (Filtration)	R	2	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	57.9	ug/l
		Manganese Total 10 days TAT	S	8.18	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	0.78	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	0.97	mg/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	16.9	mg/l



Approved by:

Barbara Lee

**Barbara Lee
 Environmental
 Scientist**

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismegmore
Furbo
Co. Galway

Report No. : 292916
Date of Receipt : 19/04/2016
Start Date of Analysis : 19/04/2016
Date of Report : 18/05/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
668690	TCN 6 19/04/16	E coli (Filtration)	R	0	cfu/100ml
		Total Coliforms (Filtration)	R	0	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	52.8	ug/l
		Manganese Total 10 days TAT	S	6.08	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	0.69	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	0.98	mg/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	17.9	mg/l



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Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 292917
Date of Receipt : 19/04/2016
Start Date of Analysis : 19/04/2016
Date of Report : 18/05/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
668691	TCN 7 19/04/16	E coli (Filtration)	R	0	cfu/100ml
		Total Coliforms (Filtration)	R	0	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	34.9	ug/l
		Manganese Total 10 days TAT	S	8.54	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	0.52	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	3.91	mg/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	26.9	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 292918
 Date of Receipt : 19/04/2016
 Start Date of Analysis : 19/04/2016
 Date of Report : 18/05/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
668693	TCN 8 19/04/16	E coli (Filtration)	R	12	cfu/100ml
		Total Coliforms (Filtration)	R	12	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	21.9	ug/l
		Manganese Total 10 days TAT	S	6.18	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	0.87	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	1.6	mg/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	23.9	mg/l



Approved by:

Barbara Lee

**Barbara Lee
 Environmental
 Scientist**

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismegmore
Furbo
Co. Galway

Report No. : 292919
Date of Receipt : 19/04/2016
Start Date of Analysis : 19/04/2016
Date of Report : 18/05/2016
Order Number :
Sample taken by : CLS

Lab No	Sample Description	Test	*	Result	Units
668695	TCN 9 19/04/16	E coli (Filtration)	R	0	cfu/100ml
		Total Coliforms (Filtration)	R	0	cfu/100ml
		Lead Total	S	<0.38	ug/l
		Iron Total 10 days TAT10	S	10.6	ug/l
		Manganese Total 10 days TAT	S	3.63	ug/l
		Chromium Total 10 days	S	<0.93	ug/l
		Copper Total 10 days	S	0.74	ug/l
		Zinc Total 10 days	S	<4.6	ug/l
		Potassium Total 10 days	S	1.79	ug/l
		Cadmium Total 10 days	S	<0.09	ug/l
		Sodium Total 10 days	S	27.5	mg/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 295865
 Date of Receipt : 19/04/2016
 Start Date of Analysis : 19/04/2016
 Date of Report : 31/05/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
676220	TCN 1 19/04/16	Magnesium Total 10 days	S	3.28	mg/l
676221	TCN 2 19/04/16	Magnesium Total 10 days	S	3.98	mg/l
676222	TCN 3 19/04/16	Magnesium Total 10 days	S	3.27	mg/l
676223	TCN 4 19/04/16	Magnesium Total 10 days	S	3.18	mg/l
676224	TCN 5 19/04/16	Magnesium Total 10 days	S	3.79	mg/l
676225	TCN 6 19/04/16	Magnesium Total 10 days	S	2.93	mg/l
676226	TCN 7 19/04/16	Magnesium Total 10 days	S	3.56	mg/l
676227	TCN 8 19/04/16	Magnesium Total 10 days	S	2.95	mg/l
676228	TCN 9 19/04/16	Magnesium Total 10 days	S	3.4	mg/l

Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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* Location of analysis: R=Ros Muc, M=MedPharma, S=Subcontracted.

Hydro Environmental Ltd.,
4, Caisel Riada,
Clarinbridge,
Co. Galway

N6 sampling sites:

June 2016

Table 1.

Date	Sample	Temperature	pH	suspended solids	TDS*	COD	BOD	Alkalinity*
		°C		mg/l	mg/l	mg/l	mg/l	mg/l CaCO ₃
08.06.16	Liberty Stream	16.3	8.02	3.0	202	42	<2.0	94
08.06.16	Barna village	14.6	7.97	2.4	208	35	<2.0	92
08.06.16	Cappagh south	17.0	8.02	1.0	196	37	<2.0	104
08.06.16	Cappagh north	18.2	8.01	1.2	266	39	<2.0	100
08.06.16	Waterworks		8.18	3.4	198	37	<2.0	92
08.06.16	Daingean		8.50	2.8	196	37	<2.0	92
08.06.16	Ballindooley		8.20	1.4	248	33	<2.0	148
08.06.16	Inner Coolough		8.18	2.8	296	32	2.7	182
08.06.16	Outer Coolough		8.26	1.8	270	32	<2.0	164

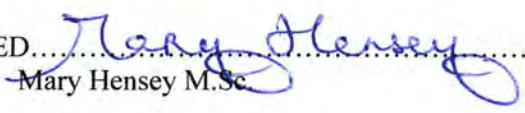
Table 2.

Date	Sample	Ammonia	Nitrate	Nitrite	Phosphate	sulphate	chloride
		mg/l N	mg/l N	mg/l N	mg/l P	mg/l	mg/l
08.06.16	Liberty Stream	0.016	0.115	0.003	0.013	28.9	63.0
08.06.16	Barna village	0.068	1.420	0.010	0.092	40.5	43.2
08.06.16	Cappagh south	0.019	0.396	0.002	0.004	18.5	32.4
08.06.16	Cappagh north	0.018	0.465	0.002	0.006	16.1	39.6
08.06.16	Waterworks	0.037	0.024	0.002	0.003	<7.0	23.4
08.06.16	Daingean	0.026	0.014	0.001	<0.003	<7.0	25.2
08.06.16	Ballindooley	0.010	0.010	0.001	<0.003	<7.0	36.9
08.06.16	Inner Coolough	0.014	0.025	<0.001	0.003	24.0	35.1
08.06.16	Outer Coolough	0.014	0.009	0.003	<0.003	14.2	34.2

Test methods. The following methods were used for sample analysis:

pH: Method No. 12 Revision No. 4
Phosphate : Method No. 5 Revision No. 9
Ammonia : Method No. 2 Rev No. 012
Nitrite : Method No. 10 Rev No. 004
Nitrate : Method No. 11 Rev No. 003
BOD: Method No. 4 Revision No. 12
Suspended Solids: Method No. 7 Revision No. 4
COD: Method No. 13 Revision No. 4
Chloride : Method No. 9 Revision No. 3
Sulphate (as SO₄) : Method No. 14 Revision No. 2

*not accredited

SIGNED.....
Mary Hensey M.Sc.

DATE..18-7-16...

This report relates only to the samples tested.

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 297872
Date of Receipt : 09/06/2016
Start Date of Analysis : 09/06/2016
Date of Report : 07/07/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680446	TCN 1 08/06/16	E coli (Filtration)	R	42	cfu/100ml
		Total Coliforms (Filtration)	R	42	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	33	mg/l
		Iron, total	R	26	ug/l
		Potassium, total	R	1	mg/l
		Magnesium, total	R	4	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

See below for test specifications and accreditation status.

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* Location of analysis: R=Ros Muc, M=MedPharma, S=Subcontracted.

It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 301235
Date of Receipt : 09/06/2016
Start Date of Analysis : 09/06/2016
Date of Report : 07/07/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680447	TCN 2 08/06/16	E coli (Filtration)	R	136est	cfu/100ml
		Total Coliforms (Filtration)	R	136est	cfu/100ml
		Copper, total	R	25	ug/l
		Sodium, total	R	32	mg/l
		Iron, total	R	15	ug/l
		Potassium, total	R	4	mg/l
		Magnesium, total	R	4	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l

****Note:** est means that results obtained were calculated from plates containing greater than 100 colonies



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 297873
Date of Receipt : 09/06/2016
Start Date of Analysis : 09/06/2016
Date of Report : 07/07/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680448	TCN 3 08/06/16	E coli (Filtration) ✓	R	590	cfu/100ml
		Total Coliforms (Filtration) ✓	R	590	cfu/100ml
		Copper, total ✓	R	<1	ug/l
		Sodium, total ✓	R	26	mg/l
		Iron, total ✓	R	50	ug/l
		Potassium, total ✓	R	2	mg/l
		Magnesium, total ✓	R	4	mg/l
		Manganese, total ✓	R	15	ug/l
		Zinc, total ✓	R	<5	ug/l
		Chromium, total ✓	R	<0.5	ug/l
		Lead, total ✓	R	<0.5	ug/l
		Cadmium, total ✓	R	<0.5	ug/l



Approved by:

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Environmental
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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 297874
Date of Receipt : 09/06/2016
Start Date of Analysis : 09/06/2016
Date of Report : 07/07/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680450	TCN 4 08/06/16	E coli (Filtration)	R	630	cfu/100ml
		Total Coliforms (Filtration)	R	630	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	25	mg/l
		Iron, total	R	46	ug/l
		Potassium, total	R	2	mg/l
		Magnesium, total	R	4	mg/l
		Manganese, total	R	7	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



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Scientist

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Complete Laboratory Solutions

[Tel] 091 574355

[Fax] 091 574356

[Email] services@cls.ie

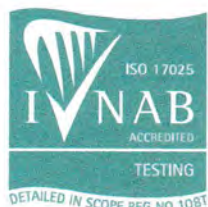
[web] www.cls.ie

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 297875
Date of Receipt : 09/06/2016
Start Date of Analysis : 09/06/2016
Date of Report : 15/07/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680452	TCN 5 08/06/16	E coli (Filtration)	R	99	cfu/100ml
		Total Coliforms (Filtration)	R	99	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	19	mg/l
		Iron, total	R	78	ug/l
		Potassium, total	R	1	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	13	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



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Environmental
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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 297876
 Date of Receipt : 09/06/2016
 Start Date of Analysis : 09/06/2016
 Date of Report : 15/07/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680454	TCN 6 08/06/16	E coli (Filtration)	R	87	cfu/100ml
		Total Coliforms (Filtration)	R	87	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	18	mg/l
		Iron, total	R	59	ug/l
		Potassium, total	R	1	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	8	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 297877
 Date of Receipt : 09/06/2016
 Start Date of Analysis : 09/06/2016
 Date of Report : 15/07/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680456	TCN 7 08/06/16	E coli (Filtration)	R	48	cfu/100ml
		Total Coliforms (Filtration)	R	48	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	26	mg/l
		Iron, total	R	<10	ug/l
		Potassium, total	R	3	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



Approved by:

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Complete Laboratory Solutions

Complete Laboratory Solutions

[Tel] 091 574355

[Fax] 091 574356

[Email] services@cls.ie

[web] www.cls.ie

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 297878
Date of Receipt : 09/06/2016
Start Date of Analysis : 09/06/2016
Date of Report : 15/07/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680457	TCN 8 08/06/16	E coli (Filtration)	R	64	cfu/100ml
		Total Coliforms (Filtration)	R	64	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	25	mg/l
		Iron, total	R	<10	ug/l
		Potassium, total	R	2	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 297879
 Date of Receipt : 09/06/2016
 Start Date of Analysis : 09/06/2016
 Date of Report : 15/07/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
680459	TCN 9 08/06/16	E coli (Filtration)	R	0	cfu/100ml
		Total Coliforms (Filtration)	R	0	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	23	mg/l
		Iron, total	R	13	ug/l
		Potassium, total	R	2	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	7	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



Approved by:

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Environmental
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Hydro Environmental Ltd.,
4, Caisel Riada,
Clarinbridge,
Co. Galway

N6 sampling sites:

August 2016

Table 1.

Date	Sample	pH	suspended solids	TDS*	COD	BOD	Alkalinity*
			mg/l	mg/l	mg/l	mg/l	mg/l CaCO ₃
24.08.16	Liberty Stream	7.88	2.1	164	59	<2.0	70
24.08.16	Barna village	7.68	1.9	220	58	2.0	98
24.08.16	Cappagh south	7.89	2.7	158	40	<2.0	80
24.08.16	Cappagh north	7.83	3.4	156	51	<2.0	68
25.08.16	Waterworks	8.33	1.0	144	15	<2.0	90
25.08.16	Daingean	8.38	1.4	146	15	<2.0	100
25.08.16	Ballindooley	8.42	5.3	224	29	<2.0	138
25.08.16	Inner Coolough	8.11	4.4	280	<10	<2.0	218
25.08.16	Outer Coolough	8.32	<1.0	250	12	<2.0	168

Table 2.

Date	Sample	Ammonia	Nitrate	Nitrite	Phosphate	sulphate	chloride
		mg/l N	mg/l N	mg/l N	mg/l P	mg/l	mg/l
24.08.16	Liberty Stream	0.014	0.213	0.006	0.011	<7.0	36.1
24.08.16	Barna village	0.011	0.400	0.005	0.052	46.1	34.3
24.08.16	Cappagh south	0.014	0.223	0.005	0.005	<7.0	36.1
24.08.16	Cappagh north	0.014	0.208	0.007	0.006	<7.0	25.3
25.08.16	Waterworks	0.018	0.009	0.002	<0.003	<7.0	19.9
25.08.16	Daingean	0.027	0.015	0.002	<0.003	<7.0	30.7
25.08.16	Ballindooley	0.078	0.008	0.002	<0.003	<7.0	36.1
25.08.16	Inner Coolough	0.014	0.676	0.002	<0.003	18.6	30.7
25.08.16	Outer Coolough	0.039	0.018	0.002	<0.003	25.9	37.9

Test methods. The following methods were used for sample analysis:

pH: Method No. 12 Revision No. 5
Phosphate : Method No. 5 Revision No. 9
Ammonia : Method No. 2 Rev No. 012
Nitrite : Method No. 10 Rev No. 004
Nitrate : Method No. 11 Rev No. 003
BOD: Method No. 4 Revision No. 12
Suspended Solids: Method No. 7 Revision No. 4
COD: Method No. 13 Revision No. 4
Chloride : Method No. 9 Revision No. 3
Sulphate (as SO₄) : Method No. 14 Revision No. 2

*not accredited

SIGNED.....*Mary Hensey*.....
Mary Hensey M.Sc.

DATE..14-9-16..

This report relates only to the samples tested.

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 306063
 Date of Receipt : 25/08/2016
 Start Date of Analysis : 25/08/2016
 Date of Report : 07/09/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
700595	TCN 1 24/08/16	E coli (Filtration)	R	69	cfu/100ml
		Total Coliforms (Filtration)	R	69	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	26	mg/l
		Iron, total	R	336	ug/l
		Potassium, total	R	1	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	19	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismelgmore
 Furbo
 Co. Galway

Report No. : 306065
 Date of Receipt : 25/08/2016
 Start Date of Analysis : 25/08/2016
 Date of Report : 07/09/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
700598	TCN 2 24/08/16	E coli (Filtration)	R	158est	cfu/100ml
		Total Coliforms (Filtration)	R	158est	cfu/100ml
		Copper, total	R	10	ug/l
		Sodium, total	R	25	mg/l
		Iron, total	R	367	ug/l
		Potassium, total	R	3	mg/l
		Magnesium, total	R	4	mg/l
		Manganese, total	R	13	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l

*Note: est means that results obtained were calculated from plates containing greater than 100 colonies



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 306066
 Date of Receipt : 25/08/2016
 Start Date of Analysis : 25/08/2016
 Date of Report : 13/09/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
700601	TCN 3 24/08/16	E coli (Filtration)	R	98	cfu/100ml
		Total Coliforms (Filtration)	R	98	cfu/100ml
		Copper, total	R	<2	ug/l
		Sodium, total	R	22	mg/l
		Iron, total	R	537	ug/l
		Potassium, total	R	2	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	35	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<1	ug/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismegmore
 Furbo
 Co. Galway

Report No. : 306067
 Date of Receipt : 25/08/2016
 Start Date of Analysis : 25/08/2016
 Date of Report : 07/09/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
700603	TCN 4 24/08/16	E coli (Filtration)	R	98	cfu/100ml
		Total Coliforms (Filtration)	R	98	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	21	mg/l
		Iron, total	R	712	ug/l
		Potassium, total	R	2	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	33	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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Complete Laboratory Solutions

[Tel] 091 574355

[Fax] 091 574356

[Email] services@cls.ie

[web] www.cls.ie

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 306138
Date of Receipt : 26/08/2016
Start Date of Analysis : 26/08/2016
Date of Report : 06/09/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
700994	TCN 5 25/08/16	E coli (Filtration)	R	0	cfu/100ml
		Total Coliforms (Filtration)	R	0	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	14	mg/l
		Iron, total	R	39	ug/l
		Potassium, total	R	1	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	8	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l
		PAH total	R	5	ng/l
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	53 **Unknown Pattern	ug/l

** Note: The comment expressed here is an interpretation and is not INAB accredited



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
 Hensey Glan Uisce Teo.
 Coismeigmore
 Furbo
 Co. Galway

Report No. : 306139
 Date of Receipt : 26/08/2016
 Start Date of Analysis : 26/08/2016
 Date of Report : 12/09/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
701000	TCN 6 25/08/16	E coli (Filtration)	R	30	cfu/100ml
		Total Coliforms (Filtration)	R	30	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	14	mg/l
		Iron, total	R	29	ug/l
		Potassium, total	R	1	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	10	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l
		PAH total	R	4	ng/l
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	106 **Unknown Pattern	ug/l

** Note: The comment expressed here is an interpretation and is not INAB accredited



Approved by:

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Environmental
Scientist

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CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 306140
Date of Receipt : 26/08/2016
Start Date of Analysis : 26/08/2016
Date of Report : 12/09/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
701005	TCN 7 25/08/16	E coli (Filtration)	R	21	cfu/100ml
		Total Coliforms (Filtration)	R	21	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	19	mg/l
		Iron, total	R	<10	ug/l
		Potassium, total	R	2	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l
		PAH total	R	8	ng/l
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	197 **Unknown Pattern	ug/l

** Note: The comment expressed here is an interpretation and is not INAB accredited



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

See below for test specifications and accreditation status.

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* Location of analysis: R=Ros Muc, M=MedPharma, S=Subcontracted.

It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.



Complete Laboratory Solutions

Complete Laboratory Solutions

[Tel] 091 574355

[Fax] 091 574356

[Email] services@cls.ie

[web] www.cls.ie

CERTIFICATE OF ANALYSIS

Client : Mary Hensey
Hensey Glan Uisce Teo.
Coismeigmore
Furbo
Co. Galway

Report No. : 306141
Date of Receipt : 26/08/2016
Start Date of Analysis : 26/08/2016
Date of Report : 12/09/2016
Order Number :
Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
701008	TCN 8 25/08/16	E coli (Filtration)	R	100	cfu/100ml
		Total Coliforms (Filtration)	R	100	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	17	mg/l
		Iron, total	R	<10	ug/l
		Potassium, total	R	2	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l
		PAH total	R	8	ng/l
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	70 **Unknown Pattern	ug/l

** Note: The comment expressed here is an interpretation and is not INAB accredited



Approved by:

Barbara Lee

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Environmental
Scientist

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Client : Mary Hensey
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Report No. : 306142
 Date of Receipt : 26/08/2016
 Start Date of Analysis : 26/08/2016
 Date of Report : 12/09/2016
 Order Number :
 Sample taken by : Client

Lab No	Sample Description	Test	*	Result	Units
701011	TCN 9 25/08/16	E coli (Filtration)	R	90	cfu/100ml
		Total Coliforms (Filtration)	R	90	cfu/100ml
		Copper, total	R	<1	ug/l
		Sodium, total	R	17	mg/l
		Iron, total	R	<10	ug/l
		Potassium, total	R	2	mg/l
		Magnesium, total	R	3	mg/l
		Manganese, total	R	<5	ug/l
		Zinc, total	R	<5	ug/l
		Chromium, total	R	<0.5	ug/l
		Lead, total	R	<0.5	ug/l
		Cadmium, total	R	<0.5	ug/l
		PAH total	R	17	ng/l
		Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID	R	134 **Unknown Pattern	ug/l

** Note: The comment expressed here is an interpretation and is not INAB accredited



Approved by:

Barbara Lee

Barbara Lee
Environmental
Scientist

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* Location of analysis: R=Ros Muc, M=MedPharma, S=Subcontracted.

It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.

A.11.2 Water Quality Monitoring

Annex 2 2024 Data

Annex 2 2024 Updated Data

Water Quality Monitoring of Selected Surface Waters for the N6 Galway City Ring Road Project

The Surface Water Sampling Locations are presented in Figure 1 as follows:

The Laboratory Water Quality Testing was carried out by Henesey Glan Uisce Teo, Na Forbartha, Co. Galway and CLS Laboratories Galway City.

- | | |
|-------------------|--|
| 1. Liberty | Sruthán na Libertí |
| 2. Bearna Village | Trusky Stream |
| 3. Cappagh South | Bearna Stream d/s of the Tonabrooky confluence |
| 4. Cappagh North | Bearna Stream d/s of the Tonabrooky confluence |
| 5. Dangan Slip | Corrib River |
| 6. Terryland | TerryLand water intake Jordan's Island |
| 6'. New Intake | New water Intake Corrib Dyke Road Terryland |
| 7. Inner Coolagh | Coolagh Lake Inner |
| 8. Outer Coolagh | Coolagh Lake Outer |
| 9. Ballindooley | Ballindooley Lough |

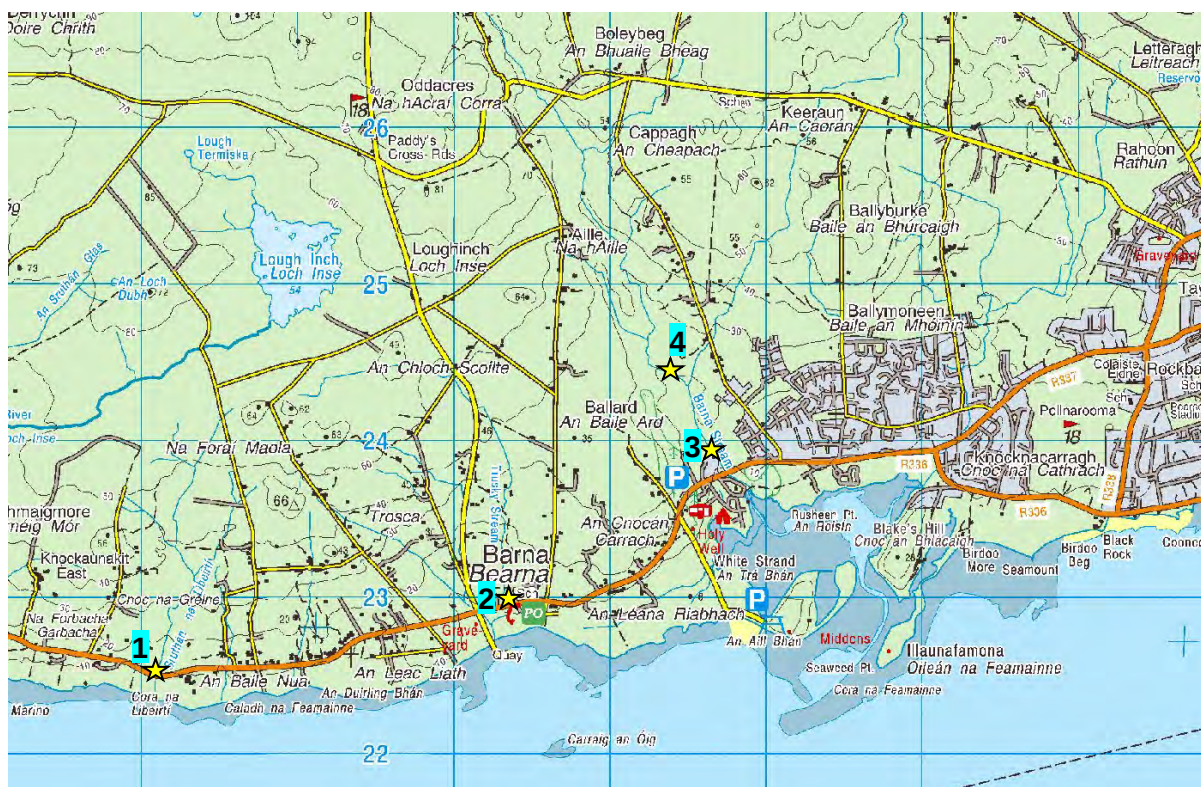


Figure 1a Location of Surface Water Quality Monitoring Sites

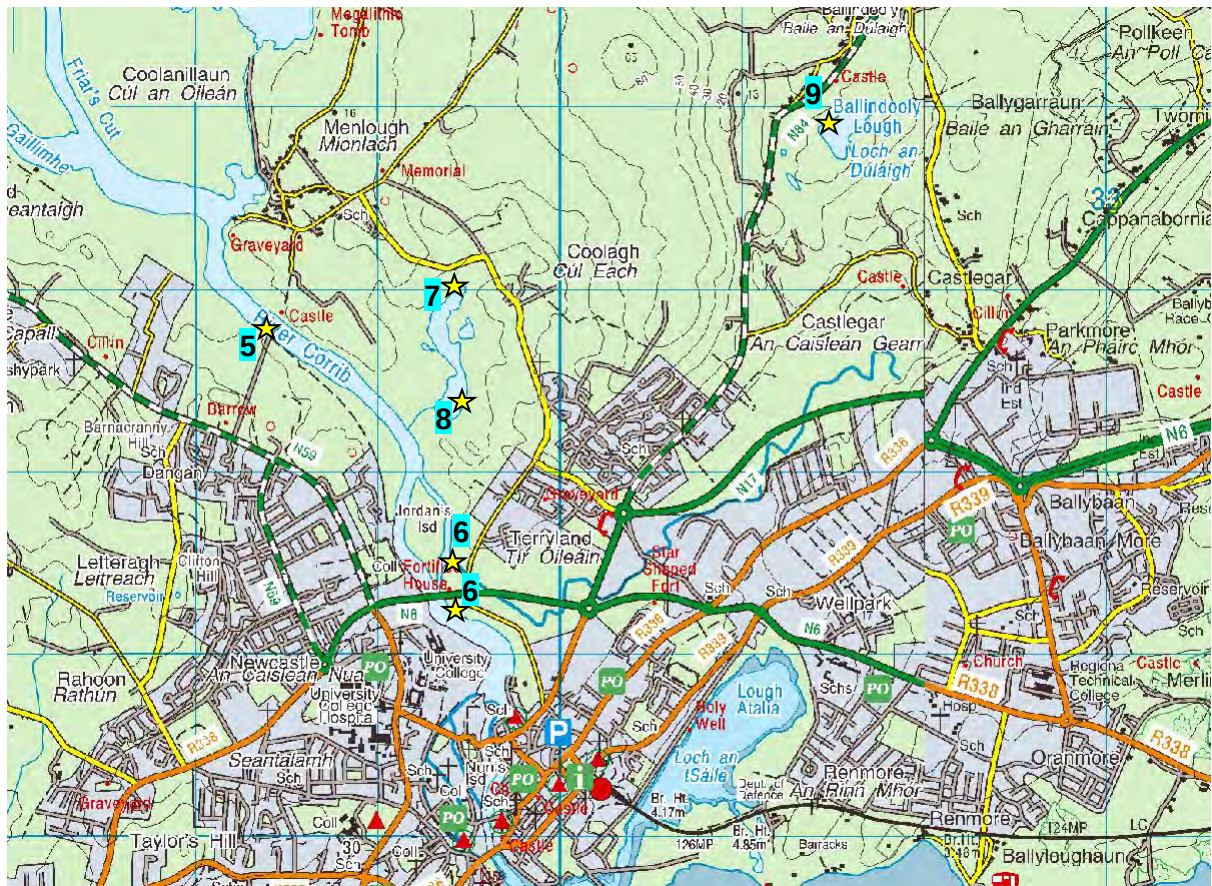


Figure 1b Location of Surface Water Quality Monitoring Sites (Continued)

Date	Sample Location	pH	suspended solids mg/l	COD mg/l	BOD mg/l	conductivity µS @20°	calcium mg/l	Alkalinity mg/l CaCO3	total hardness mg/l CaCO3
30.11.15	Liberty Stream	7.83	2.6	32	<2.0	227	8.06		57.3
30.11.15	Barna village	7.56	4.7	37	2.1	230	19.3		63.2
30.11.15	Cappagh south	7.46	3.9	27	<2.0	193	15.8		52.4
30.11.15	Cappagh north	7.43	2.2	26	<2.0	175	14.8		43.9
02.12.15	Waterworks	7.77	2.4	24	<2.0	417	44.5		266
30.11.15	Daingean	8.10	8.2	14	<2.0	306	55.6		149
30.11.15	Ballindooley	7.32	1.5	<10	<2.0	592	69.8		302
02.12.15	Inner Coolough	7.72	1.0	12	<2.0	510	41.4		229
04.02.16	Liberty Stream	7.90	1.2	35	<2.0			60	
04.02.16	Barna village	7.76	1.8	38	<2.0			78	
04.02.16	Cappagh south	7.67	2.0	27	<2.0			58	
04.02.16	Cappagh north	7.46	1.6	24	<2.0			50	
03.02.16	Waterworks	8.13	2.2	16	2.1			138	
03.02.16	Daingean	8.24	4.8	18	2.1			164	
03.02.16	Ballindooley	8.19	2.2	15	2.7			206	
03.02.16	Inner Coolough	8.16	<1.0	10	2.1			198	
03.02.16	Outer Coolough	8.20	1.4	10	3.2			202	
19.04.16	Liberty Stream	8.16	<1.0	90	<2.0			66	
19.04.16	Barna village	7.90	<1.0	47	<2.0			102	
19.04.16	Cappagh south	8.01	1.3	33	<2.0			86	
19.04.16	Cappagh north	7.94	1.5	36	2.2			78	
19.04.16	Waterworks	8.40	1.6	31	2.3			108	
19.04.16	Daingean	8.35	1.0	29	<2.0			118	
19.04.16	Ballindooley	7.50	8.0	49	5.8			150	
19.04.16	Inner Coolough	8.17	5.8	28	3.4			200	
19.04.16	Outer Coolough	8.24	3.8	30	3.2			204	

Date	Sample Location	pH	suspended solids mg/l	COD mg/l	BOD mg/l	conductivity $\mu\text{S @20}^\circ$	calcium mg/l	Alkalinity mg/l CaCO3	total hardness mg/l CaCO3
08.06.16	Liberty Stream	8.02	3.0	42	<2.0			94	
08.06.16	Barna village	7.97	2.4	35	<2.0			92	
08.06.16	Cappagh south	8.02	1.0	37	<2.0			104	
08.06.16	Cappagh north	8.01	1.2	39	<2.0			100	
08.06.16	Waterworks	8.18	3.4	37	<2.0			92	
08.06.16	Daingean	8.50	2.8	37	<2.0			92	
08.06.16	Ballindooley	8.20	1.4	33	<2.0			148	
08.06.16	Inner Coolough	8.18	2.8	32	2.7			182	
08.06.16	Outer Coolough	8.26	1.8	32	<2.0			164	
24.08.16	Liberty Stream	7.88	2.1	59	<2.0			70	
24.08.16	Barna village	7.68	1.9	58	2.0			98	
24.08.16	Cappagh south	7.89	2.7	40	<2.0			80	
24.08.16	Cappagh north	7.83	3.4	51	<2.0			68	
25.08.16	Waterworks	8.33	1.0	15	<2.0			90	
25.08.16	Daingean	8.38	1.4	15	<2.0			100	
25.08.16	Ballindooley	8.42	5.3	29	<2.0			138	
25.08.16	Inner Coolough	8.11	4.4	7	<2.0			218	
25.08.16	Outer Coolough	8.32	<1.0	12	<2.0			168	
13.03.24	Liberty Stream	7.70	2.0	41	3	163	19	43.2	54.7
12.03.24	Barna village	7.60	2.0	37	1.0	215	30	76.6	81.5
12.03.24	Barna Stream Cappagh N	7.50	<2	36	1	149	19	47.6	54.1
13.03.24	Barna Stream Cappagh S	7.70	<2	27	<1	171	23	57.6	62.4
13.03.24	Corrib New Intake (ref 6')	8.40	5.0	14	<1	245	46	118	114
12.03.24	Daingean	8.20	<2	<10	<1	264	48	127	123
12.03.24	Ballindooley	8.00	<2	14	2	392	70	186	176
12.03.24	Inner Coolough	7.90	87.0	107	<4	390	79	208	190

Date	Sample Location	Ammonia mg/l N	Nitrate mg/l N	Nitrite mg/l N	Total N mg/l N	Phosphate mg/l P	Total P mg/l P	faecal coliforms cfu/100ml	total coliforms cfu/100ml
30.11.15	Liberty Stream	0.025	0.505	0.005	0.901	0.01	0.017	2400	3200
30.11.15	Barna village	0.027	0.717	0.005	1.139	0.038	0.075	2700	4800
30.11.15	Cappagh south	0.026	0.502	0.003	0.84	0.009	0.017	2600	3700
30.11.15	Cappagh north	0.026	0.406	0.003	0.758	0.011	0.023	6500	8800
02.12.15	Waterworks	0.01	0.521	0.006	0.897	0.003	0.023	<1	0
30.11.15	Daingean	0.08	0.583	0.006	0.882	0.003	0.013	700	2100
30.11.15	Ballindooley	0.042	1.848	0.001	1.919	0.058	0.06	500	1600
02.12.15	Inner Coolough	0.014	0.142	0.001	0.41	<0.003	0.021	<1	0
04.02.16	Liberty Stream	0.018	0.37	0.004		0.008		70	70
04.02.16	Barna village	0.023	0.59	0.006		0.031		114	114
04.02.16	Cappagh south	0.014	0.427	0.003		0.003		64	64
04.02.16	Cappagh north	0.018	0.319	0.004		0.003		146	146
03.02.16	Waterworks	0.018	0.425	0.003		0.004		68	68
03.02.16	Daingean	0.017	0.49	0.005		0.006		63	63
03.02.16	Ballindooley	0.017	0.151	0.003		0.028		6	6
03.02.16	Inner Coolough	0.037	0.479	0.003		0.026		29	29
03.02.16	Outer Coolough	0.039	0.499	0.004		0.022		27	27
19.04.16	Liberty Stream	0.011	0.207	0.003		0.008		42	42
19.04.16	Barna village	0.019	0.59	0.003		0.026		68	68
19.04.16	Cappagh south	0.014	0.333	0.003		0.003		46	46
19.04.16	Cappagh north	0.013	0.295	0.003		0.005		35	35
19.04.16	Waterworks	0.085	0.296	0.002		<0.003		2	2
19.04.16	Daingean	0.061	0.25	0.002		<0.003		0	0
19.04.16	Ballindooley	0.184	0.016	0.001		0.03		0	0
19.04.16	Inner Coolough	0.037	0.302	0.003		<0.003		12	12
19.04.16	Outer Coolough	0.057	0.292	0.003		<0.003		0	0

Date	Sample Location	Ammonia mg/l N	Nitrate mg/l N	Nitrite mg/l N	Total N mg/l N	Phosphate mg/l P	Total P mg/l P	faecal coliforms cfu/100ml	total coliforms cfu/100ml
08.06.16	Liberty Stream	0.016	0.115	0.003		0.013		42	42
08.06.16	Barna village	0.068	1.42	0.01		0.092		136est	136est
08.06.16	Cappagh south	0.019	0.396	0.002		0.004		590	590
08.06.16	Cappagh north	0.018	0.465	0.002		0.006		630	630
08.06.16	Waterworks	0.037	0.024	0.002		0.003		99	99
08.06.16	Daingean	0.026	0.014	0.001		<0.003		87	87
08.06.16	Ballindooley	0.01	0.01	0.001		<0.003		48	48
08.06.16	Inner Coolough	0.014	0.025	<0.001		0.003		64	64
08.06.16	Outer Coolough	0.014	0.009	0.003		<0.003		0	0
24.08.16	Liberty Stream	0.014	0.213	0.006		0.011		69	69
24.08.16	Barna village	0.011	0.4	0.005		0.052		158est	158est
24.08.16	Cappagh south	0.014	0.223	0.005		0.005		98	98
24.08.16	Cappagh north	0.014	0.208	0.007		0.006		98	98
25.08.16	Waterworks	0.018	0.009	0.002		<0.003		0	0
25.08.16	Daingean	0.027	0.015	0.002		<0.003		30	30
25.08.16	Ballindooley	0.078	0.008	0.002		<0.003		21	21
25.08.16	Inner Coolough	0.014	0.676	0.002		<0.003		100	100
25.08.16	Outer Coolough	0.039	0.018	0.002		<0.003		90	90
13.03.24	Liberty Stream	0.019	0.19	<0.005	1.28	0.043	<0.05	330	>1,000
12.03.24	Barna village	0.01	0.467	<0.005	1.06	0.068	0.06	>100	>100
12.03.24	Barna Stream Cappagh N	0.013	0.191	<0.005	0.561	<0.03	<0.05	>100	>100
13.03.24	Barna Stream Cappagh S	0.013	0.229	<0.005	0.641	<0.03	<0.05	480	60
13.03.24	Corrib New Intake (ref 6'	0.01	0.345	<0.005	0.525	<0.03	<0.05	15	>100
12.03.24	Daingean	0.01	0.418	<0.005	0.778	<0.03	<0.05	32	>100
12.03.24	Ballindooley	0.01	<0.1	<0.005	<0.5	0.042	0.06	21	17
12.03.24	Inner Coolough	0.006	0.548	<0.005	0.876	0.04	0.17	30	860

Date	Sample Location	sulphate mg/l	chloride mg/l	sodium mg/l	potassium mg/l	magnesium mg/l	zinc mg/l	lead mg/l	copper mg/l
30.11.15	Liberty Stream	<7.0		9		1.4	<0.005		0.005
30.11.15	Barna village	<7.0		12		2.8	<0.005		<0.001
30.11.15	Cappagh south	<7.0		12		2.3	<0.005		<0.001
30.11.15	Cappagh north	<7.0		12		2.3	<0.005		<0.001
02.12.15	Waterworks	<7.0		18		1.6	<0.005		0.004
30.11.15	Daingean	<7.0		12		3.2	<0.005		<0.001
30.11.15	Ballindooley	<7.0		12		3.7	<0.005		0.004
02.12.15	Inner Coolough	18.7		12		1.8	<0.005		0.004
04.02.16	Liberty Stream	<7.0	45.2	26.3	1.72	2.5	<0.005	<0.006	0.004
04.02.16	Barna village	9.87	43.3	24.1	2.48	2.6	<0.005	<0.006	0.017
04.02.16	Cappagh south	9.24	43.3	21.2	1.72	2.1	<0.005	<0.006	0.002
04.02.16	Cappagh north	<7.0	43.3	23.1	1.44	2.1	<0.005	<0.006	<0.001
03.02.16	Waterworks	<7.0	23.5	14.3	<5	2.3	<0.005	<0.006	<0.001
03.02.16	Daingean	<7.0	21.7	13.7	<5	2.4	<0.005	<0.006	<0.001
03.02.16	Ballindooley	<7.0	34.3	23.5	4.17	3.1	<0.005	<0.006	<0.001
03.02.16	Inner Coolough	20.8	34.3	20.7	1.96	2.4	<0.005	<0.006	0.001
03.02.16	Outer Coolough	22.2	32.5	19.5	1.89	2.5	<0.005	<0.006	<0.001
19.04.16	Liberty Stream	<7.0	37.9	30.2	0.96	3.28	<0.005	<0.004	0.003
19.04.16	Barna village	22	41.5	31.9	1.95	3.98	<0.005	<0.004	0.022
19.04.16	Cappagh south	14.3	36.1	27.1	1.61	3.27	<0.005	<0.004	0.002
19.04.16	Cappagh north	<7.0	32.5	26.2	1.12	3.18	<0.005	<0.004	0.001
19.04.16	Waterworks	<7.0	27.1	16.9	0.97	3.79	<0.005	<0.004	0.001
19.04.16	Daingean	<7.0	28.9	17.9	0.98	2.93	<0.005	<0.004	0.001
19.04.16	Ballindooley	<7.0	39.7	26.9	3.91	3.56	<0.005	<0.004	0.001
19.04.16	Inner Coolough	13.5	43.3	23.9	1.6	2.95	<0.005	<0.004	0.001
19.04.16	Outer Coolough	26.7	27.1	27.5	1.79	3.4	<0.005	<0.004	0.001

Date	Sample Location	sulphate mg/l	chloride mg/l	sodium mg/l	potassium mg/l	magnesium mg/l	zinc mg/l	lead mg/l	copper mg/l
08.06.16	Liberty Stream	28.9	63	33	1	4	<0.005	<0.0005	<0.001
08.06.16	Barna village	40.5	43.2	32	4	4	<0.005	<0.0005	0.025
08.06.16	Cappagh south	18.5	32.4	26	2	4	<0.005	<0.0005	<0.001
08.06.16	Cappagh north	16.1	39.6	25	2	4	<0.005	<0.0005	<0.001
08.06.16	Waterworks	<7.0	23.4	19	1	3	<0.005	<0.0005	<0.001
08.06.16	Daingean	<7.0	25.2	18	1	3	<0.005	<0.0005	<0.001
08.06.16	Ballindooley	<7.0	36.9	26	3	3	<0.005	<0.0005	<0.001
08.06.16	Inner Coolough	24	35.1	25	2	3	<0.005	<0.0005	<0.001
08.06.16	Outer Coolough	14.2	34.2	23	2	3	<0.005	<0.0005	<0.001
24.08.16	Liberty Stream	<7.0	36.1	26	1	3	<0.005	<0.0005	<0.001
24.08.16	Barna village	46.1	34.3	25	3	4	<0.005	<0.0005	0.01
24.08.16	Cappagh south	<7.0	36.1	22	2	3	<0.005	<0.0005	<0.001
24.08.16	Cappagh north	<7.0	25.3	21	2	3	<0.005	<0.0005	<0.001
25.08.16	Waterworks	<7.0	19.9	14	1	3	<0.005	<0.0005	<0.001
25.08.16	Daingean	<7.0	30.7	14	1	3	<0.005	<0.0005	<0.001
25.08.16	Ballindooley	<7.0	36.1	19	2	3	<0.005	<0.0005	<0.001
25.08.16	Inner Coolough	18.6	30.7	17	2	3	<0.005	<0.0005	<0.001
25.08.16	Outer Coolough	25.9	37.9	17	2	3	<0.005	<0.0005	<0.001
13.03.24	Liberty Stream	<5	26	14	1	2	<0.006	<0.0006	0.003
12.03.24	Barna village	8.93	22.2	13	2	3	0.007	<0.0006	0.011
12.03.24	Barna Stream Cappagh N	5.88	17.5	10	1	2	<0.006	<0.0006	<0.0012
13.03.24	Barna Stream Cappagh S	6.84	19.9	11	1	2	<0.006	<0.0006	<0.0012
13.03.24	Corrib New Intake (ref 6'	5.51	14.2	8	1	3	<0.006	<0.0006	<0.0012
12.03.24	Daingean	5.85	14.2	8	1	3	0.03	<0.0006	0.004
12.03.24	Ballindooley	6.79	24.3	14	4	3	<0.006	<0.0006	<0.0012
12.03.24	Inner Coolough	12.4	15.7	10	2	2	0.005	<0.0005	0.003

Date	Sample Location	iron mg/l	manganese mg/l	chromium µg/l	cadmium µg/l	Extractable hydrocarbons mg/l	TDS mg/l	PAH total ng/l	turbidity NTU
30.11.15	Liberty Stream	0.027	<0.005			62			2.13
30.11.15	Barna village	0.098	<0.005			44			3.01
30.11.15	Cappagh south	0.082	<0.005			57			2.1
30.11.15	Cappagh north	0.088	<0.005			78			1.8
02.12.15	Waterworks	0.053	0.032			37			0.3
30.11.15	Daingean	0.031	<0.005			55			6.58
30.11.15	Ballindooley	0.026	<0.005			21			1.08
02.12.15	Inner Coolough	0.011	0.005			63			0.25
04.02.16	Liberty Stream	0.202	<0.005	<0.5			202		
04.02.16	Barna village	0.333	<0.005	0.6			196		
04.02.16	Cappagh south	0.198	<0.005	<0.5			160		
04.02.16	Cappagh north	0.201	0.006	<0.5			160		
03.02.16	Waterworks	0.148	<0.005	<0.5			166		
03.02.16	Daingean	0.178	<0.005	<0.5			200		
03.02.16	Ballindooley	0.178	<0.005	<0.5			264		
03.02.16	Inner Coolough	0.163	<0.005	<0.5			294		
03.02.16	Outer Coolough	0.188	<0.005	<0.5			306		
19.04.16	Liberty Stream	0.17	0.009	<0.9	<0.09		182		
19.04.16	Barna village	0.267	0.022	<0.9	<0.09		216		
19.04.16	Cappagh south	0.316	0.044	<0.9	<0.09		178		
19.04.16	Cappagh north	0.457	0.045	<0.9	<0.09		154		
19.04.16	Waterworks	0.058	0.008	<0.9	<0.09		158		
19.04.16	Daingean	0.053	0.006	<0.9	<0.09		158		
19.04.16	Ballindooley	0.035	0.009	<0.9	<0.09		254		
19.04.16	Inner Coolough	0.022	0.006	<0.9	<0.09		310		
19.04.16	Outer Coolough	0.011	0.004	<0.9	<0.09		318		

Date	Sample Location	iron mg/l	manganese mg/l	chromium µg/l	cadmium µg/l	Extractable hydrocarbons mg/l	TDS mg/l	PAH total ng/l	turbidity NTU
08.06.16	Liberty Stream	0.026	<0.005	<0.5	<0.5		202		
08.06.16	Barna village	0.015	<0.005	<0.5	<0.5		208		
08.06.16	Cappagh south	0.05	0.015	<0.5	<0.5		196		
08.06.16	Cappagh north	0.046	0.007	<0.5	<0.5		266		
08.06.16	Waterworks	0.078	0.013	<0.5	<0.5		198		
08.06.16	Daingean	0.059	0.008	<0.5	<0.5		196		
08.06.16	Ballindooley	<0.010	<0.005	<0.5	<0.5		248		
08.06.16	Inner Coolough	<0.010	<0.005	<0.5	<0.5		296		
08.06.16	Outer Coolough	0.013	0.007	<0.5	<0.5		270		
24.08.16	Liberty Stream	0.336	0.019	<0.5	<0.5		164		
24.08.16	Barna village	0.367	0.013	<0.5	<0.5		220		
24.08.16	Cappagh south	0.537	0.035	<0.5	<0.5		158		
24.08.16	Cappagh north	0.712	0.033	<0.5	<0.5		156		
25.08.16	Waterworks	0.039	0.008	<0.5	<0.5	53	144	5	
25.08.16	Daingean	0.029	0.01	<0.5	<0.5	106	146	4	
25.08.16	Ballindooley	<0.010	<0.005	<0.5	<0.5	197	224	8	
25.08.16	Inner Coolough	<0.010	<0.005	<0.5	<0.5	70	280	8	
25.08.16	Outer Coolough	<0.010	<0.005	<0.5	<0.5	134	250	17	
13.03.24	Liberty Stream	0.341	0.041	<0.6	<0.6	66	85	0	2.0
12.03.24	Barna village	0.333	0.032	<0.6	<0.6	33	109	0	2.6
12.03.24	Barna Stream Cappagh N	0.485	0.045	<0.6	<0.6	52	75	0	1.9
13.03.24	Barna Stream Cappagh S	0.302	0.024	<0.6	<0.6	50	88	0	1.9
13.03.24	Corrib New Intake (ref 6'	0.144	0.014	<0.6	<0.6	91	126	0	7.1
12.03.24	Daingean	0.053	<0.006	<0.6	<0.6	44	134	0	0.5
12.03.24	Ballindooley	0.044	<0.006	<0.6	<0.6	57	197	1	2.2
12.03.24	Inner Coolough	0.204	0.175	1	<0.5	44	195	0	22.4

