

DCS2 - Discharge Point

Parameter	Discharge Consent Threshold	Detection limit (typical)	27/11/2014	16/12/2014	18/12/2014	14/01/2015	04/02/2015	Duplicate/DCS7	11/02/2015	Duplicate/DCS7	Duplicate	23/03/2015	26/03/2015	Duplicate	23/04/2015	Duplicate	28/05/2015	28/05/2015	02/06/2015	30/07/2015	04/08/2015	Duplicate
Total Suspended Solids	50	3	3	11	18	22	6	<3	13	11	8	3	27	31	7	10	23	36	39	<10	14	23
Biochemical Oxygen Demand	10	1	<1	<1	<1	1.58 [#]	1.76 [#]	1.61 [#]	1.03 [#]	<1	<2	<2	1.23 [#]	<2	1.04 [#]	<2	1.71 [#]	1.49 [#]	<1	<1	1	8
pH	>6 & <9	-	7.38	7.47	7.08	7.18	7.34 (7.00)	6.92	7.5 (7.48)	7.68	7.8	7.7	7.83 (8.54)	7.8	7.83	7.9	8.29	8.27	7.82	7.98	7.69 (8.41)	7.7
Total zinc ⁴	33.8	18*	<18	<18	30	30	<18	<18	<18	<18	11.47	10.21	<18	30.07	<18	<3.73	17.8	14.6	<18	4	6	14.59
Dissolved mercury ⁴	1.7	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.1	<0.04	<0.01	<0.01	<0.1	<0.01	<0.01	1.051
Dissolved cadmium ⁴	0.7	0.6*	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.09	<0.6	<0.09	<0.6	<0.05	<0.1	<0.1	<0.6	0.13	0.06	0.121
Dissolved iron ⁴	3.9	0.23	<0.23	<0.23	<0.23	<0.23	<0.23	0.34	<0.23	<0.23	0.04908	0.03045	<0.23	0.8087	<0.23	0.18	<0.019	<0.019	<0.23	<0.0047	0.1384	0.9932
Dissolved copper ⁴	16.2	9*	12	10	<9	<9	<9	<9	<9	<9	9.065	7.101	10	2.202	<9	4.765	9.39	8.77	<9	<3	<3	13.99
Dissolved chromium ²	8.1	2	<2	<2	2	7	2	<2	<2	<2	<0.68	<0.68	<2	<0.68	<2	<0.28	2.13	2.01	<2	<0.2	<0.2	<0.68
Chromium VI	N/A	5	<5	<5	<5	9	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<30	<5	<2	<2	<5
Chromium III	N/A	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<5	<2	<2	<5
Dissolved nickel ³	20	3	<3	<3	6	14	10	<3	14	11	12.01	6.544	5	0.833	7	5.578	5.22	5.09	5	6.5	7	9.321
Dissolved arsenic ¹	50	1	1	<1	<1	3	4.8	1.1	5.1	4.3	6.23	2.971	7.9	1.929	2.5	2.214	16	13.7	7.7	6.7	6.5	8.64
Dissolved lead ³	7.2	6*	<6	<6	<6	<6	<6	<6	<6	<6	<0.173	<0.173	<6	<0.173	<6	<0.12	<0.02	<0.02	<6	2.6	2.5	0.37
Total hardness as CaCO3	N/A	3.2	123	137	132	135	137	24.1	150	146	139	136	106	114	147	159	140	148	141	179	175	183
Visible oil or grease	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

^{1,2&3} Discharge Consent Threshold from The Water Framework Directive (Priority Substances and Classification) Regulations (Northern Ireland) 2011

¹ Annual mean value presented for 'Good Standard for rivers and freshwater lakes'

² Annual mean environmental standard for chromium III (4.7µg/L) plus annual mean environmental standard for chromium VI (3.4µg/L) presented for 'Good Standard for rivers and freshwater lakes'

³ Annual mean environmental standard (AA-EQS) value presented for priority substance and its compounds for all rivers and lakes

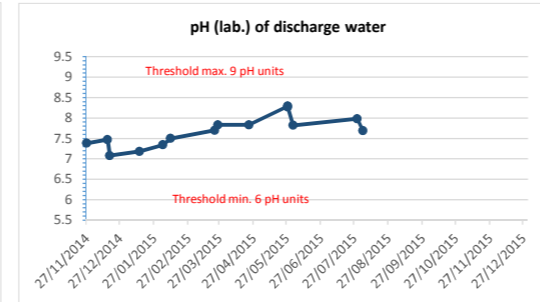
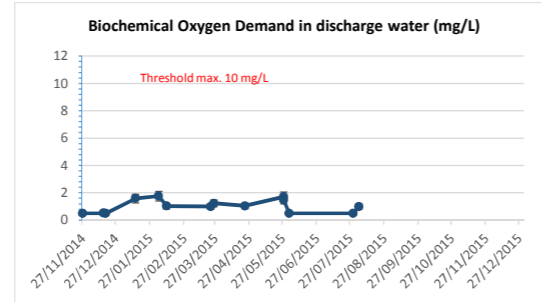
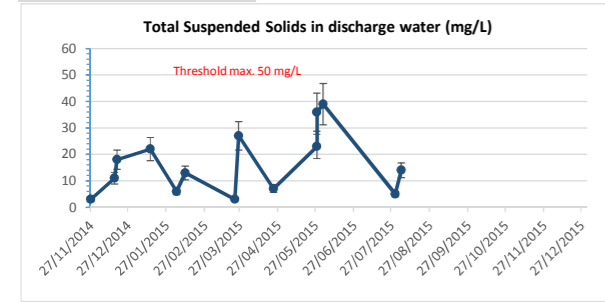
⁴ Department Specific

* Detection limit greater than 50% of Discharge Consent Threshold concentration

BOD over diluted, therefore result indicative only

^A Container with headspace

Exceedance of threshold
Duplicate sample



Notes:

Half detection limit used for graphing when parameter less than detect
Error bars of 20% to reflect limit of acceptable duplicate reproducibility

DCS1 - Curraghinalt Burn upstream

Parameter	Detection limit	27/11/2014	16/12/2014	18/12/2015	14/01/2015	04/02/2015	11/02/2015	Duplicate	26/03/2015	23/04/2015	21/05/2015	28/05/2015	02/06/2015	28/07/2015	30/07/2015	04/08/2015
Total Suspended Solids	3	<3	<3	<3	9	<3	<3	<2	18	<3	3	5	4	9	<10	<10
Biochemical Oxygen Demand	1	<1	<1	<1	1.87 [#]	1.39 [#]	<1	<2	1.23 [#]	<1	1.29 [#]	<1	<1	1.49 ^{#A}	1	2
pH	-	6.7	6.75	7	6.9	7.23 (6.73)	6.8 (7.33)	8.2	6.81 (7.05)	6.99	7.19	7.7	6.57	5.94 (6.49)	6.85	5.74 (8.36)
Total zinc	18	<18	<18	<18	20	<18	<18	5.394	<18	<18	<18	7.49	<18	14	8	7
Dissolved mercury	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.01	<0.1	0.51	<0.01	<0.01
Dissolved cadmium	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.6	<0.6	<0.6	<0.1	<0.6	6.9	<0.03	<0.03
Dissolved iron	0.23	2.07	0.52	0.67	0.39	0.36	0.36	0.6633	<0.23	1.34	1.34	1.47	0.52	1.2	2.569	2.046
Dissolved copper	9	<9	<9	<9	<9	<9	<9	7.207	<9	<9	<9	2.56	<9	9.6	<3	<3
Dissolved chromium	2	<2	<2	<2	<2	<2	<2	<0.68	<2	<2	<2	0.956	<2	4.7	<0.2	0.6
Chromium VI	5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<30	<5	<20	<2	<2
Chromium III	30	<30	<30	<30	<30	<30	<30		<30	<30	<30	<30	<30	<20	<2	<2
Dissolved nickel	3	<3	<3	<3	<3	<3	<3	0.702	<3	<3	<3	0.913	<3	3.1	0.7	1
Dissolved arsenic	1	2.4	<1	<1	<1	1.3	<1	1.197	2	3.2	2.2	3.69	1.2	2.8	2.5	2.6
Dissolved lead	6	<6	<6	<6	<6	<6	<6	0.284	<6	<6	<6	0.315	<6	2.1	<0.4	<0.4
Total hardness as CaCO3	3.2	21.7	16.2	21.1	30.1	24.2	19.7	19	13.4	33.1	17.6	29.4	9.98	<15	229	12
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

[#] BOD over diluted, therefore result indicative only

^A Container with headspace

DCS3 - Curraghinalt Burn downstream

Parameter	Detection limit	27/11/2014	16/12/2014	18/12/2014	14/01/2015	04/02/2015	11/02/2015	26/03/2015	23/04/2015	21/05/2015	28/05/2015	02/06/2015	Duplicate	28/07/2015	30/07/2015	04/08/2015
Total Suspended Solids	3	3	8	4	5	3	5	28	72	<3	18	9	3	16	<10	<10
Biochemical Oxygen Demand	1	1.08 [#]	<1	<1	1.65 [#]	1.91 [#]	<1	1.31 [#]	<1	1.25 [#]	1.22 [#]	<1	<2	1.42 ^{#A}	1	2
pH	-	7.19	7.46	6.95	7.44	7.16 (6.93)	7.45 (7.2)	6.91 (7.31)	7.82	7.88	7.76	6.81	7.4	6.02 (6.28)	7.12	5.95 (6.40)
Total zinc	18	<18	<18	<18	20	<18	<18	<18	<18	<18	11.2	<18	36.51	13	9	7
Dissolved mercury	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.1	<0.2	<0.5	<0.01	<0.01
Dissolved cadmium	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.1	<0.6	<0.09	0.45	<0.03	<0.03
Dissolved iron	0.23	1.78	0.54	0.65	0.38	0.25	0.25	0.24	0.8	1.13	1.03	0.52	1.485	1.2	2.634	1.843
Dissolved copper	9	<9	<9	<9	<9	<9	<9	<9	<9	<9	5.58	<9	19.83	4.2	3	<3
Dissolved chromium	2	<2	<2	<2	6	<2	<2	<2	<2	<2	1.8	<2	1.017	4.6	<0.2	<0.2
Chromium VI	5	<5	<5	<5	8	<5	<5	<5	<5	<5	<30	<5		<20	<2	<2
Chromium III	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30		<20	<2	<2
Dissolved nickel	3	<3	<3	<3	<3	<3	4	<3	<3	<3	2.12	<3	6.816	4.6	0.7	0.4
Dissolved arsenic	1	2.1	<1	<1	<1	2	1.3	2.7	5.3	8.3	7.7	1.5	7.069	1.3	<0.9	2
Dissolved lead	6	<6	<6	<6	<6	<6	<6	<6	<6	<6	0.187	<6	0.381	<1	1	0.7
Total hardness as CaCO3	3.2	35.5	27.5	21	34.5	41.4	49.4	13.7	71.4	36.6	65.1	10.8	25	<15	21	21
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

[#] BOD over diluted, therefore result indicative only

^A Container with headspace

DCS4 - Owenkillew River upstream

Parameter	Detection limit	27/11/2014	16/12/2014	18/12/2014	14/01/2015	04/02/2015	11/02/2015	26/03/2015	Duplicate	23/04/2015	Duplicate	21/05/2015	02/06/2015	07/07/2015	28/07/2015	30/07/2015	04/08/2015	Duplicate	
Total Suspended Solids	3	<3	<3	6	<3	<3	<3	42	43	<3	<2	6	9	13	9	<10	12	3	
Biochemical Oxygen Demand	1	<1	<1	<1	1.47 [#]	1.29 [#]	<1	2.57 [#]	8	<1	<2	1.95 [#]	1.28 [#]	2.47 [#]	1.95 ^{#A}	1	1	<2	
pH	-	6.84	7.07	6.68	6.77	6.7 (5.92)	7.06 (8.15)	6.9 (8.54)	7.7	7.93	7.2	7.23	6.79	(7.36)	6.1 (6.50)	6.68	7.28 (9.90)	7.4	
Total zinc	18	<18	<18	<18	<18	<18	<18	<18	9.716	<18	<0.63	<18	<18	6.7	9.6	6	6	10.31	
Dissolved mercury	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.03	<0.1	<0.1	<0.5	<0.5	0.04	<0.01	<0.2	
Dissolved cadmium	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.6	<0.01	<0.6	<0.6	<0.08	0.6	<0.03	<0.03	<0.09	
Dissolved iron	0.23	1.05	0.5	0.45	0.43	0.4	0.36	0.25	0.2771	0.56	0.806	0.53	0.36	0.56	0.78	1.146	2.459	1.482	
Dissolved copper	9	<9	<9	<9	<9	<9	<9	<9	20.09	<9	0.445	<9	<9	1.1	3.2	<3	<3	11.24	
Dissolved chromium	2	<2	<2	<2	<2	<2	<2	<2	<0.68	<2	<0.58	<2	<2	<1	5.8	<0.2	<0.2	<0.68	
Chromium VI	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<20	<20	<2	<2	<5	
Chromium III	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<20	<20	<2	<2	<30	
Dissolved nickel	3	<3	57	<3	<3	<3	<3	4	6.45	<3	0.569	<3	<3	<1	6.3	0.4	0.7	1.513	
Dissolved arsenic	1	<1	<1	<1	<1	<1	<1	4.8	5.032	1.5	1.399	1.4	1.1	<1	1.2	2.4	2.4	3.454	
Dissolved lead	6	<6	<6	<6	<6	<6	<6	<6	0.543	<6	<0.02	<6	<6	<1	<1	2.2	0.5	0.573	
Total hardness as CaCO3	3.2	28.8	24.3	19.1	25.1	31	27.9	17.6	21	37.5	38	23.7	16.2	30	<15	25	23	22	
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

[#] BOD over diluted, therefore result indicative only

DCS5 - Owenkillew River downstream

Parameter	Detection limit	27/11/2014	16/12/2014	18/12/2014	14/01/2015	04/02/2015	11/02/2015	23/03/2015	26/03/2015	23/04/2015	21/05/2015	Duplicate	02/06/2015	07/07/2015	28/07/2015	30/07/2015	04/08/2015	
Total Suspended Solids	3	<3	<3	8	<3	<3	<3	5	35	<3	<3	2	<3	14	12	<10	<10	
Biochemical Oxygen Demand	1	<1	<1	<1	1.61 [#]	1.37 [#]	<1	<2	2.59 [#]	<1	1.17 [#]	<2	1.1 [#]	2.01 [#]	2.04 ^{#A}	1	2	
pH	-	7.04	7.15	6.61	6.76	6.66 (5.54)	7.03 (7.45)	7.5	6.9 (6.77)	7.71	6.94	7.5	6.88	7.23 (7.41)	6.2 (6.96)	6.88	6.51 (7.41)	
Total zinc	18	<18	<18	<18	<18	<18	<18	11.69	20	<18	<18	4.396	<18	8.8	11	7	5	
Dissolved mercury	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.5	<0.5	0.05	0.03	
Dissolved cadmium	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.6	<0.6	<0.6	<0.09	<0.6	<0.08	0.5	<0.03	<0.03	
Dissolved iron	0.23	0.98	0.5	0.42	0.43	0.37	0.39	0.6379	0.25	0.58	0.56	0.5218	0.38	0.63	0.83	1.241	2.749	
Dissolved copper	9	<9	<9	<9	<9	<9	<9	0.322	<9	<9	<9	2.819	<9	<1	3.2	<3	<3	
Dissolved chromium	2	<2	<2	<2	<2	<2	<2	<0.68	<2	<2	<2	<0.68	<2	<1	6.5	<0.2	0.3	
Chromium VI	5	<5	<5	<5	8	<5	<5	<5	<5	<5	<5	<5	<5	<20	<20	<2	<2	
Chromium III	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<20	<20	<2	<2	
Dissolved nickel	3	<3	<3	<3	<3	<3	<3	0.649	<3	<3	<3	0.997	<3	<1	7.1	0.5	0.8	
Dissolved arsenic	1	<1	<1	<1	<1	1.2	<1	1.158	5	1.5	1.3	1.183	1.1	<1	1.2	2.4	5.4	
Dissolved lead	6	<6	<6	<6	<6	<6	<6	<0.173	<6	<6	<6	<0.173	<6	<1	<1	2.4	<0.4	
Total hardness as CaCO3	3.2	29.3	23.8	18.2	25.3	31	27.1	35	17.2	41.6	23	25	16.3	31	<15	27	21	
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.

[#] BOD over diluted, therefore result indicative only

DCS6 - Field Blanks

Parameter	Detection limit	27/11/2014	16/12/2014	18/12/2014	14/01/2015	04/02/2015	11/02/2015	11/02/2015	26/03/2015	23/04/2015	21/05/2015	02/06/2015	07/07/2015	28/07/2015	30/07/2015	04/08/2015
Total Suspended Solids	3	<3	<3	<3	<3	<3	<3	<2	<3	<3	<3	<3	<3	<3	<10	<10
Biochemical Oxygen Demand	1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1 ^A	<1	<1
pH	-	6.15	6.4	5.59	6	5.22	6.89	8.1	5.75	6.15	6.41	6.73	5.89	5.91	5.67	5.76
Total zinc	18	<18	<18	<18	<18	<18	<18	<3.73	<18	<18	<18	<18	4.7	6.9	3	<3
Dissolved mercury	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.01	<0.01
Dissolved cadmium	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.09	<0.6	<0.6	<0.6	<0.6	<0.08	0.43	<0.03	<0.03
Dissolved iron	0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	0.003	<0.23	<0.23	<0.23	<0.23	<0.02	<0.02	<0.0047	<0.0047
Dissolved copper	9	<9	<9	<9	<9	<9	<9	1.454	<9	<9	<9	<9	<1	1.9	<3	<3
Dissolved chromium	2	<2	<2	<2	<2	<2	<2	<0.68	<2	<2	<2	<2	<1	6.9	<0.2	<0.2
Chromium VI	5	<5	<5	<5	11	<5	<5		<5	<5	<5	<5	<20	<20	<2	<2
Chromium III	30	<30	<30	<30	<30	<30	<30		<30	<30	<30	<30	<20	<20	<2	<2
Dissolved nickel	3	<3	<3	<3	<3	<3	<3	<0.374	<3	<3	<3	<3	<1	8.3	<0.2	<0.2
Dissolved arsenic	1	<1	<1	<1	<1	<1	<1	<0.352	<1	<1	<1	<1	<1	<1	<0.9	<0.9
Dissolved lead	6	<6	<6	<6	<6	<6	<6	<0.173	<6	<6	<6	<6	<1	<1	1.6	<0.4
Total hardness as CaCO3	3.2	<3.2	<3.2	<3.2	<3.2	<3.2	<3.2	<5.2	<3.2	<3.2	<3.2	<3.2	<15	<15	<1	<1
Visible oil or grease	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

pH values presented in pH units. Values in brackets are field pH measurements. Total Suspended Solids, Biochemical Oxygen Demand, Total hardness & Dissolved iron concentrations are presented in mg/L, all other parameters are in µg/L.