



Water Authority-Cayman

Grand Cayman Public Water Supply Biannual Analysis (from Red Gate Plants)

PARAMETER - BIANNUAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>	Sample Date 09-Jul-07	Sample Date 08-Dec-08	Sample Date 30-Nov-09	Sample Date 11-Apr-11	Sample Date 29-Nov-11	Sample Date 14-Aug-12	Sample Date 05-Aug-13	Sample Date 06-Aug-14	Sample Date 19-Oct-15	Sample Date 20-Jun-16	Sample Date 10-Jul-17	WHO Health Based Guidelines
Alkalinity	4.80	n/r	2.10	n/d	2.30	5.35	2.00	1.80	1.80	2.10	1.00	none
Aluminum	BDL	BDL	BDL	n/d	<0.005	<0.005	<0.005	0.010	0.005	<0.005	<0.005	none
Ammonia	BDL	BDL	n/r	BDL	<0.017	<0.017	n/r	< 0.02	<0.02	<0.02	n/r	none
Bicarbonate	5.9	n/r	2.6	n/d	2.8	6.2	2.4	2.20	2.20	2.60	1.22	none
Boron	n/d	n/d	1.3	0.7	1.1	1.1	1.5	1.2	1.3	0.9	n/d	2.4
Calcium	1.4	1.2	0.8	n/d	1.6	0.7	1.8	0.8	0.4	0.2	0.8	none
Chloride	91.0	108.0	103.9	86.0	98.0	107.9	105.0	102.5	120.0	83.0	84.0	none
Copper	BDL	0.002	BDL	n/d	<0.021	<0.021	<0.02	0.03	<0.04	<0.04	<0.04	2
Hardness	6.5	10.0	9.0	n/d	4.0	3.5	7.0	4.5	3.5	2.5	5.0	none
Iron	BDL	0.01	0.02	0.12	<0.008	<0.008	0.01	< 0.02	<0.02	<0.02	<0.02	none
Magnesium	0.7	1.7	1.7	n/d	0.0	0.4	0.6	0.6	0.6	0.5	0.7	none
Nitrate as N	BDL	0.30	1.80	BDL	<0.1	<0.1	<0.1	< 0.1	<0.1	0.3	n/d	50 as NO ₃ ⁻
Orthophosphate	1.74	1.47	2.18	n/d	1.56	1.10	1.10	0.94	1.1	1.0	1.0	none
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	none
Sulphate	11.5	12.9	10.8	n/d	10.6	8.7	10.9	4.7	7.7	7.7	4.1	none
Sulfide	BDL	BDL	BDL	BDL	<0.002	<0.002	<0.01	< 0.01	<0.01	<0.01	<0.01	none
Zinc	0.548	0.484	0.688	0.643	0.461	0.438	0.420	0.34	0.4	0.4	0.4	none
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>												
Total dissolved solids	150	195	173	158	170	169	210	156.9	169	165	140	none
Electrical conductivity μ S/cm	336	391	369	329	354	353	370	361	352	322	322	none
Total chlorine residual	0.55	0.56	0.57	0.56	0.59	0.66	0.65	0.53	0.50	0.53	0.62	none
Free chlorine residual	0.53	0.51	0.55	0.52	0.56	0.56	0.59	0.51	0.50	0.44	0.51	≥ 0.5
pH units	7.53	7.09	7.43	7.69	7.74	7.78	7.07	7.51	7.82	7.39	7.51	none
Total coliform bacteria cfu/100ml	BDL	BDL	BDL	BDL	BDL	BDL	<1	<1.0	<1.0	<1.0	<1.0	0
<i>E. coli</i> cfu/100 ml	BDL	BDL	BDL	BDL	BDL	BDL	<1	<1.0	<1.0	<1.0	<1.0	0
Thermotolerant coliform bacteria cfu/100ml	BDL	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0
Heterotrophic Plate Count cfu/ml	0	0	0	n/d	0	0	<0.1	< 0.1	<0.1	<0.1	<0.1	none

NOTE: Samples collected @ Red Gate Reservoir Site; n/d = not done; n/a = not applicable; n/r = not reportable; BDL = Below Detection Limit
 Results below detection limit are reported as "<" and the detection limit.
 Annual analysis instead of biannual from 2002 onwards
 Marcela Martinez Ebanks, Laboratory Manager



Water Authority-Cayman

Grand Cayman Public Water Supply Biannual Analysis (North Side Facility)

PARAMETER - ANNUAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	WHO Health Based Guidelines	Aesthetic Guidelines
	02-Dec-09	15-Nov-11	20-Aug-12	12-Aug-13	11-Aug-14	29-Oct-15	15-Jun-16		
Alkalinity	3.70	2.00	2.70	2.10	1.10	2.40	2.50	none	none
Aluminum	0.01	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	none	0.2
Ammonia	0.023	<0.017	<0.017	<0.02	<0.02	<0.02	<0.02	none	1.5
Bicarbonate	4.51	2.44	3.29	2.56	1.34	2.93	3.10	none	none
Boron	n/d	0.60	0.80	0.70	0.50	0.50	0.50	2.4	none
Calcium	1.6	3.0	1.2	1.6	1.0	4.00	3.60	none	none
Chloride	113	70	67	75	73	72	74	none	> 250
Copper	n/d	<0.021	<0.021	<0.02	<0.03	<0.04	<0.04	2	>1
Hardness	11.0	12.0	11.0	11.5	12.5	12.0	9.5	none	200-500
Iron	0.012	<0.008	<0.008	0.010	0.020	<0.02	<0.02	none	0.3
Magnesium	1.7	1.0	2.0	2.0	2.0	0.5	0.1	none	none
Nitrate as N	0.0	0.2	0.4	<0.1	<0.1	n/d	<0.05	50 as NO ₃ ⁻	none
Orthophosphate	1.48	0.83	1.65	1.50	1.40	1.50	1.50	none	none
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	none	200
Sulphate	8.5	8.6	9.2	12.2	8	9.4	10.4	none	250
Sulphide	n/d	<0.002	<0.002	<0.01	0.002	<0.01	<0.01	none	0.05
Zinc	0.536	0.309	0.532	0.520	0.470	0.55	0.51	none	3
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>									
Total dissolved solids	185	119	113	120	140	126	140	none	1000-1200
Electrical conductivity μ S/cm	383	250	237	249	264	265	267	none	none
Total chlorine residual	0.48	0.63	0.59	0.58	0.65	0.43	0.54	none	5
Free chlorine residual	0.44	0.61	0.53	0.55	0.54	0.38	0.50	~ 0.5	5
pH units	7.60	7.64	7.61	7.29	7.76	7.39	7.57	none	6.5-9.5
Total coliform bacteria cfu/100ml	BDL	BDL	<1	<1.0	<1	<1	<1.0	0	n/a
<i>E. coli</i> cfu/100 ml	BDL	BDL	<1	<1.0	<1	<1	<1.0	0	n/a
Thermotolerant coliform bacteria cfu/100ml	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0	n/a
Heterotrophic Plate Count cfu/ml	0	<0.1	<0.1	<0.1	1	<0.1	0.1	none	none

NOTE: Samples collected @ North Side Reservoir Site; n/d = not done; n/a = not applicable; n/r = not reportable; BDL=Below Detection Limit
 Results reported with "<" indicate that the result was below the detection limit
 Marcela Martinez Ebanks, Laboratory Manager



Water Authority-Cayman

Cayman Brac Public Water Supply Annual Analysis

	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	WHO Health Based Guidelines	Aesthetic Guidelines
PARAMETER - BIENNIAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>															
	02-Jul-03	07-Apr-04	07-Dec-05	18-Jul-07	17-Dec-08	16-Dec-09	09-Nov-11	22-Aug-12	07-Aug-13	30-Jul-14	21-Oct-15	13-Jul-16			
Alkalinity	18.6	13.1	18.8	25.9	23.1	n/r	14.6	13.6	27.6	10.3	6.8	7.6	none	none	
Aluminum	0.00	0.01	BDL	BDL	BDL	0.01	<0.005	<0.005	0.02	0.01	<0.005	0.01	none	0.2	
Ammonia	0.01	0.01	BDL	BDL	BDL	0.00	<0.02	n/r	<0.02	<0.02	<0.02	<0.02	none	1.5	
Bicarbonate	22.7	16.0	22.9	31.6	28.2	n/r	17.8	16.6	33.7	12.6	8.3	9.3	none	none	
Calcium	1.2	0.8	2.1	1.4	1.6	0.8	0.3	0.4	1.6	0.4	0.4	0.8	none	none	
Chloride	77	45	105	57	38	32	60	111	56	56	95.0	100.0	none	> 250	
Copper	0.08	0.00	0.03	BDL	0.04	0.01	<0.02	<0.02	0.05	<0.03	<0.04	<0.04	2	>1	
Hardness	13.0	15.0	18.5	6.8	8.0	3.0	1.5	2.0	4.5	6.5	4.0	8.0	none	200-500	
Iron	0.00	0.00	0.02	BDL	0.01	0.01	<0.01	0.02	<0.01	<0.02	<0.02	<0.02	none	0.3	
Magnesium	2.4	3.2	3.2	0.8	1.0	0.2	0.2	0.2	0.0	1.0	0.7	1.3	none	none	
Nitrate as N	0.0	0.2	BDL	BDL	BDL	n/r	<0.1	<0.1	<0.1	0	0.0	0.3	50 as NO ₃ ⁻	none	
Orthophosphate	0.16	0.00	0.25	0.16	0.33	0.60	0.99	0.67	1.30	1.20	1.0	1.2	none	none	
Sulphate	0.1	0.0	0.2	0.3	0.0	0.2	<1	<1	<1	<1.0	4.0	<1	none	250	
Sulphide	0.000	0.000	BDL	BDL	BDL	n/d	n/d	n/d	BDL	<0.01	<0.01	0.01	none	0.05	
Zinc	0.24	0.17	0.13	0.16	0.15	0.45	0.60	0.46	0.42	0.35	0.4	0.5	none	3	
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>															
Total dissolved solids	130	155	173	100	85	50	105	128	99	98	146	170	none	1000-1200	
Electrical conductivity $\mu S/cm$	296	323	327	200	174	103	226	269	198	205	326	367	none	none	
Total chlorine residual	0.31	0.30	0.27	0.39	0.50	0.55	0.52	0.49	0.52	0.54	0.42	0.56	none	5	
Free chlorine residual	0.28	0.28	0.25	0.39	0.47	0.52	0.49	0.46	0.50	0.51	0.35	0.48	0.5	5	
pH units	7.39	7.56	7.40	7.68	7.24	6.83	7.55	7.65	7.49	7.47	7.22	7.39	none	6.5-9.5	
Total coliform bacteria cfu/100ml	0	0	BDL	BDL	BDL	0	<1	<1	<1	<1	<1	<1	0	n/a	
E. coli cfu/100 ml				BDL	BDL	0	<1	<1	<1	<1	<1	<1	0	n/a	
Thermotolerant coliform bacteria cfu/100ml	0	0	BDL		n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0	n/a	
Heterotrophic Plate Count cfu/ml	0	0	BDL	BDL	BDL	0	<0.1	<0.1	<0.1	1	<0.1	0.3	none	none	

NOTE: Samples collected @ Cayman Brac Reservoir; n/d = not done; n/a = not applicable; n/r = not reportable; BDL=Below Detection Limit
 Marcela Martinez Ebanks Laboratory Manager