Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Notice of Meeting and Meeting Agenda
Beddis Water Service Commission

Thursday, November 7, 2024 | **1:00 PM** | **SIMS Boardroom, 124 Rainbow Road, Salt Spring Island BC**

Annual General Meeting

MS Teams Link: Click here

C. Cheeseman , G. Holman, M. McCormick , C. Smid,

The Capital Regional District strives to be a place where inclusion is paramount and all people are treated with dignity. We pledge to make our meetings a place where all feel welcome and respected.

Purpose of the Annual General Meeting

The agenda for the Annual General Meeting (AGM) is approved by the members of the Commission. The purposes (and hence the agenda items) of the meeting are:

• To have the last year's AGM minutes approved (by Commission members), and to present reports on the work of the Commission on the past year's operation, maintenance, capital upgrades and financial information of the service to the service residents and owners,
• To nominate members for appointment to the Commission, and
• To enable the public to share comments on subjects which relate to the work of the Commission. The Commission can identify (under "new business") issues on which it wants feedback at the meeting. Motions raised by the public at the AGM will be considered by the commission at a subsequent regular meeting.

The Annual General Meeting is for the 2023 fiscal year

1. Territorial Acknowledgement

2. Approval of Agenda

3. Adoption of Minutes

3.1. 24-1135 Minutes of June 06, 2023 and June 06, 2024 Beddis Water Service Commission

Recommendation: That the minutes of the following meetings be adopted as presented:
-June 06, 2023 Annual General Meeting (AGM)
-June 26, 2023 Special Meeting

Attachments: Minutes: June 06, 2023

Minutes: June 26, 2024

4. Director and Chair's Report

5. Report

5.1. 24-702 Beddis Water Service Annual Report 2023

Recommendation: There is no recommendation. This report is for information only.

Attachments: Beddis Annual Report 2023

Appendix A: 2023 Statement of Operations and Reserve Balances

6. Election of Commissioner

2 Positions

7. New Business

None

8. Outstanding Business

None

9. Adjournment

Next Meeting:

-Thursday, November 07, 2024, at 02:00pm in the Salt Spring Island Multi Space (SIMS)
Boardroom, 124 Rainbow Road, Salt Spring Island, BC V8K 2V5

Making a difference...together

Minutes of the Annual General Meeting of the Beddis Water Service Commission Held June 5, 2023 for the 2022 Fiscal Year at the Salt Spring Island Multi Space (SIMS) Boardroom, 124 Rainbow Road, Salt Spring Island, BC

DRAFT

Present: **Director:** Gary Holman
Commission Members: Chris Cheeseman, Michael McCormick, and Chris Smid
Staff: Karla Campbell, Senior Manager, Salt Spring Island Electoral Area, Dean Olafson, Manager SSI Engineering, Dan Robson, Manager, Saanich Peninsula and Gulf Islands Operations (Via Zoom), Lia Xu, Manager, Finance Services (Via Zoom), and Shayla Burnham, Recording Secretary

These minutes follow the order of the agenda although the sequence may have varied.

1. **Territorial Acknowledgement / Call Meeting to Order**

   A Territorial Acknowledgement was provided by Commissioner Cheeseman and the meeting was called to order at 10:04am.

2. **Approval of Agenda**

   MOVED by Commissioner McCormick, **SECONDED** by Commissioner Smid, that the Beddis Water Service Commission approve the Monday, June 5, 2023 Annual General Meeting agenda for the 2022 fiscal year as amended by adding item 6.1 Roberts Lake, item 6.2 Blackburn Landfill/Transfer Station and, item 7.1 DAF Residuals Update.

   CARRIED

3. **Adoption of Special Minutes of April 6, 2023**

   MOVED by Commissioner McCormick, **SECONDED** by Commissioner Smid, that the Beddis Water Service Commission adopt the Special minutes of April 6, 2023 as amended by adding an additional bullet under item 5.2 Configuration of Storage and Pumping to state “Staff to review historical engineering documents and update the Commission on the recommended path forward.”

   CARRIED

   It was confirmed that no minutes from the Tuesday, June 7, 2022 Annual General Meeting for the 2021 fiscal year were recorded for adoption as there was no quorum.

4. **Director and Chairs Report**

   Director Holman briefly reported:

   - Salt Spring Island Local Community Commission elected on Saturday, May 27, with the inaugural meeting scheduled on Tuesday, June 20, 2023.

- Islands Trust hosting Open Houses as part of the engagement process of Proposed Bylaw No. 530 – Accessory Dwelling Units on Tuesday, June 6 and Saturday, June 10, 2023.
- Salt Spring Island Watershed Protection Alliance (SSIWPA) budget approved.

Chair Cheeseman – no report

5. Report

5.1 Annual Report for the 2022 Fiscal Year

There is no recommendation. This report is for information only.

6. New Business

6.1 Roberts Lake

MOVED by Commissioner McCormick, **SECONDED** by Commissioner Smid, that the Beddis Water Service Commission request staff contact the Ministry of Forest Lands & Natural Resource Operations (FLNRO) regarding water licencing of Roberts Lake and further, to have the Commissions interests considered.

CARRIED

6.2 Blackburn Landfill/Transfer Station

- The Commission noted that Per- and Polyfluoroalkyl Substances (PFAS) have not been tested before within the Cusheon Lake Watershed.

MOVED by Commissioner McCormick, **SECONDED** by Commissioner Smid, that the Beddis Water Service Commission request staff complete raw water testing for leachate in Cusheon Lake and Blackburn Lake and further request the Ministry of Environment and Climate Change Strategy resume the testing regime recommended in their 1995 Ministry of Environment (MOE) report.

CARRIED

7. Outstanding Business

7.1 DAF Residuals Update

- Staff to explore testing of DAF residuals cost saving methods and report back to the Commission with an update.

8. Next Meeting – TBD

9. Adjournment

MOVED By Commissioner Cheeseman, that the Beddis Water Service Commission adjourn the meeting at 12:06pm.

_____
CHAIR

_____
SENIOR MANAGER

Making a difference...together

Minutes of the Special Meeting of the Beddis Water Services Commission
Held Wednesday, June 26, 2024 at the Salt Spring Island Multi-Space (SIMS)
124 Rainbow Rd, Salt Spring Island, BC V8K 2K3

DRAFT

Present: **Commissioners:** C. Cheeseman, G. Holman, C. Smid,
Absent: M. McCormick,

Staff:, K. Campbell, Senior Manager, Salt Spring Island Administration, D. Ovington, Parks and Recreation Manager, Salt Spring Island Administration, D. Robson, Saanich Peninsula Gulf Island Ops Manager, Wastewater Infrastructure Operations (EP), D. Weihing, Engineering Technician, Salt Spring Island Administration, M. Williamson, Committee Clerk, (Recorder)

EP- Electronic Participation

These minutes follow the order of the agenda although the sequence may have varied.

The meeting was called to order at 01:29 pm.

1. TERRITORIAL ACKNOWLEDGEMENT

Senior manager provided a Territorial Acknowledgement.

2. Election of Chair

K. Campbell Senior Manager, Salt Spring Island called for nominations for the position of Chair of the Beddis Water Services Commission for 2024.

Commissioner C. Smid nominated Commissioner C. Chesseman, Commissioner C. Chesseman, accepted the nomination.

K. Campbell called for nominations a second time.

K. Campbell called for nominations a third time.

Hearing no further nominations, K. Campbell Senior Manager, Salt Spring Island declared Commissioner C. Chesseman, Chair of the Beddis Water Services Commission by acclamation.

3. APPROVAL OF AGENDA

MOVED by Director Holman, **SECONDED** by Commissioner C. Smid,
That agenda for the June 26, 2024, Special meeting of the Beddis Water Service Commission be approved as circulated.
CARRIED

4. DELEGATIONS/PRESENTATIONS

4.1. Presentations

There were no presentations.

4.2. Delegations

There were no delegations.

5. Special Meeting Matters

5.1. Request Additional Funds to Complete the Beddis Water Intake Project

MOVED by Commissioner Smid, **SECONDED** by Commissioner Cheeseman,
That the Beddis Water Service Commission recommends the Electoral Area Committee recommend the Capital Regional District Board amend the Beddis Water Service 2024-2028 Five Year Capital Plan by:

1. Including the Beddis Water Intake project 20-04 in the Capital Plan with $183,450 carry forward funding from 2023 into 2024;

2. Increasing the Beddis Water Intake project budget by $64,000 from $238,725 to $302,725 to be funded $24,000 from Capital Reserve Fund and $40,000 from Community Works Funds;

3. Deferring the Sky Valley Booster Pump and Second Reservoir Project Number 21-04 from 2024 to 2025.

CARRIED

6. ADJOURNMENT

MOVED by Commissioner Smid, **SECONDED** by Commissioner Cheeseman,
That the Local Community Commission adjourn the meeting at 02:14 pm.
CARRIED

_____
CHAIR

_____
SENIOR MANAGER

Beddis Water Service

2023 Annual Report

CRD | Drinking Water

INTRODUCTION

This report provides a summary of the Beddis Water Service for 2023. It includes a description of the service, summary of the water supply, demand, and production, drinking water quality, operations highlights, capital project updates and financial report.

SERVICE DESCRIPTION

The Beddis Water Utility is a rural residential community located on Salt Spring Island. The service was created in 1969 as the Beddis Waterworks District and became a CRD service in 2004. The Beddis Water Utility (Figure 1) is comprised of 137 parcels of land of which 128 are presently connected to the system.

The utility obtains its drinking water from Cusheon Lake, a relatively small lake that lies within an uncontrolled multi-use watershed. The Capital Regional District (CRD) holds two licenses to divert a total of up to 102,850 m^3 per year. Cusheon Lake is subject to seasonal water quality changes and is affected by periodic algae blooms.

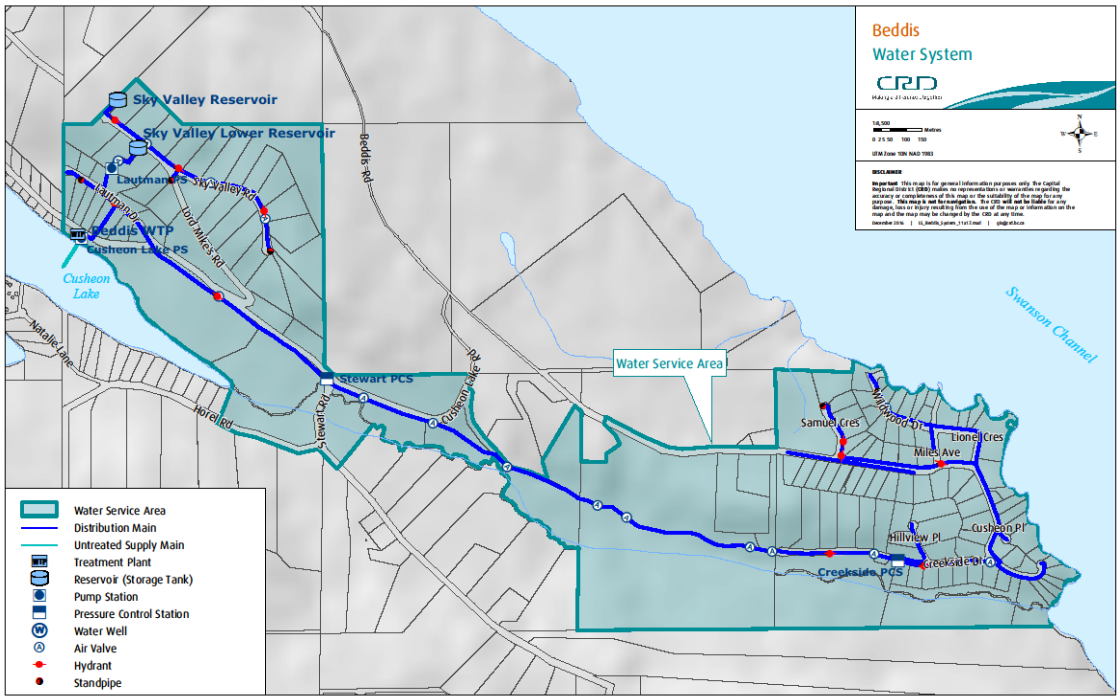

Figure 1: Beddis Water Service

The Beddis water system is primarily comprised of:

- water treatment plant (WTP) that draws water from Cusheon Lake and treats it at a location on Cusheon Road approximately 250m west of Lautman Drive. The water is treated using a rapid mix system, flocculation, dissolved air floatation (DAF) and filters, then chlorination prior to being pumped, via the distribution system to reservoirs. The water treatment plant (WTP) design flow is rate is 16.35 m^3/hour (60 Igpm)
- approximately 7,200 m of water distribution pipe
- 1 pump station/re-chlorination station
- 2 water reservoirs – one 45 m^3 (10,000 Igal) and one 76 m^3 (16,700 Igal)
- fire hydrants, standpipes, and gate valves
- water service connections complete with water meters
- 2 pressure regulating stations (PCS) Stewart Road and Creekside Drive

WATER PRODUCTION AND DEMAND

Referring to Figure 2, 20,723 cubic meters (m^3) of water was extracted (water production) from Cusheon Lake in 2023; an 10% decrease from the previous year and is 20% decrease from the five-year rolling average. Water demand (customer water billing) for the service totalled 17,904 m^3 of water; an 7% decrease from the previous year and a 7% decrease from the five-year rolling average.

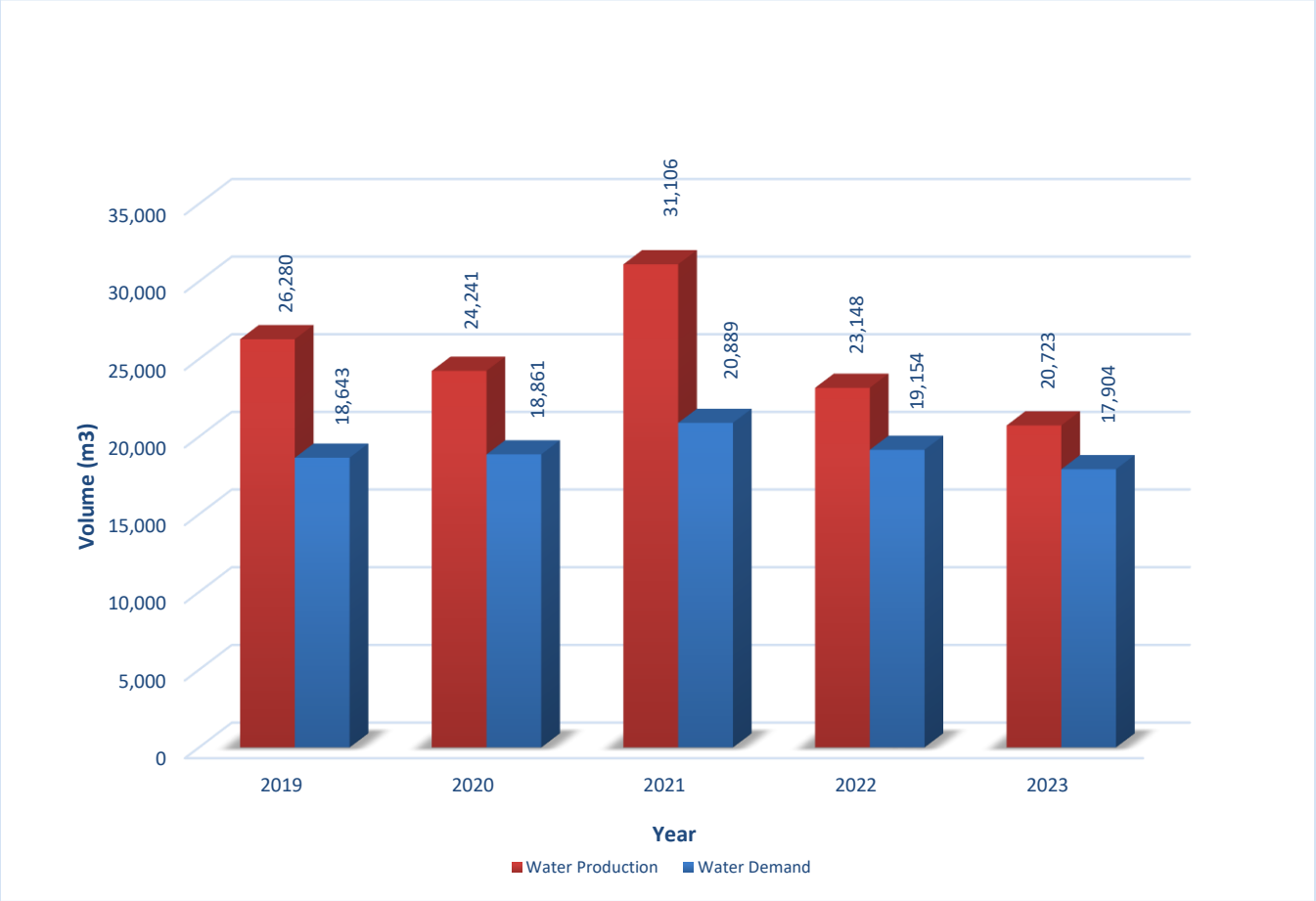

Figure 2: Beddis Water Service Annual Water Production and Demand

Water production by month for the past five years is shown in Figure 3. The monthly water production trends are typical for small water systems such as the Beddis water service.

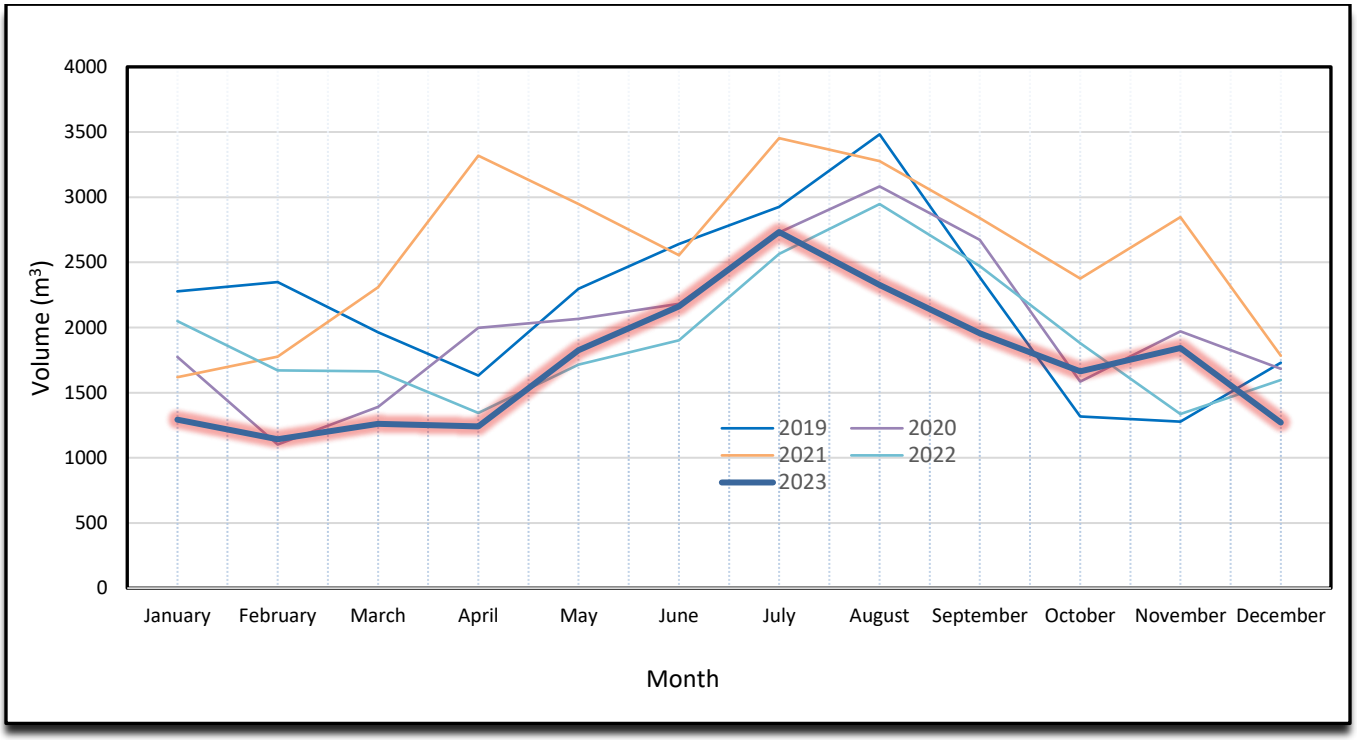

Figure 3: Beddis Water Service Monthly Water Production

The Beddis Water System is fully metered, and water meters are read quarterly. Water meter information enables water production and consumption to be compared in order to estimate leakage losses in the distribution system. The difference between water produced and water demand (total metered consumption) is called non-revenue water and includes distribution leaks, meter error, and unmetered uses such as fire hydrant usage, distribution system maintenance, and process water for the treatment plant. Non-revenue water is approximately 14%. Water loss is estimated to be approximately 12% which is considered acceptable for small water systems.

WATER QUALITY

In 2023, the analytical results of water samples collected from the Beddis Water System indicated that the drinking water was of good quality. The source water from Cusheon Lake was of good quality throughout the year with low concentrations of algae, most metals and generally low turbidity. Indicator bacteria concentrations (total coliforms) in the raw water were very low between October and April and higher during the warm weather season. Manganese concentrations were elevated in Cusheon Lake throughout all seasons and due to a lack of manganese specific treatment, the aesthetic objective in the Guidelines for Canadian Drinking Water Quality (GCDWQ) was exceeded on one occasion in the treated water (February). Manganese concentrations in exceedance of the aesthetic objective can lead to water discolouration and become a nuisance for customers. The maximum acceptable concentration (MAC) in the GCDWQ for manganese was never reached. Besides this, the DAF treatment system functioned very well under these source water conditions. The annual average of the disinfection by-product concentrations was below the limit in the GCDWQ in both sampled locations. However, a few individual results in 2023 came very close to the MAC for the disinfection by-product trihalomethanes (THM) indicating the potential for exceedances if source water conditions are not ideal and chlorine dosage is not carefully managed. Other than water temperature during the summer months, there have been no

exceedances of any monitored water quality parameter in the system. The Beddis Water System experienced two public water quality advisories in 2023; one system-wide boil water advisory that lasted from July 10 – 14, 2023, due to a major water main break, and a boil water advisory for only a small part of the Beddis system from July 19 – 22, 2023, also due to a water main break and subsequent depressurization.

The data below provides a summary of the water quality characteristics in 2023:

Raw Water:

- The raw water exhibited typically low concentrations of total coliform and *E. coli* bacteria throughout the year with significantly higher concentrations during the summer months. These higher bacteria concentrations during summer are easily addressed by the water treatment process.
- No *Giardia* cysts or *Cryptosporidium* oocysts were detected in 2023.
- The raw water samples indicated fluctuating and elevated concentrations of iron and manganese. Manganese concentrations were elevated and typically above the aesthetic objective during all seasons. Iron concentrations were also elevated during the wet season but did not reach or exceed the aesthetic objective. Episodes of elevated iron and manganese concentrations can lead to discolouration of the drinking water. Manganese has a health-related MAC which was never reached.
- The raw water was soft (median hardness 36.9 mg/L $CaCO_3$).
- The raw water turbidity (cloudiness) was often below 1 NTU with some higher peaks in the winter. Highest recorded raw water turbidity was 3.0 NTU on January 11, 2023.
- The median annual total organic carbon, an indicator of organic compounds and material in the lake water, was a moderate 4.7 mg/L, slightly up from 2022.

Treated Water:

- The treated water was bacteriologically safe to drink. No sample tested positive for *E.coli* bacteria. On two occasions, on September 12 and 18, a total coliform concentration of 1 CFU/100mL was detected in samples from the Lower Sky Valley Reservoir. This was likely caused by bacterial regrowth in this reservoir due to high water temperatures and reduced chlorine residuals. Due to the very low concentrations, no further actions were required.
- The treated water turbidity was always well below the turbidity limit of 1.0 NTU with an annual median of <0.15 NTU. This indicates the high efficacy of the existing water treatment process and overall good drinking water quality.
- The annual average levels of the disinfection by-products trihalomethanes (TTHM = 63.5 µg/L) across the distribution system were well below the limits in the GCDWQ (100 µg/L). Haloacetic acids (HAA) were not tested in 2023; historic data has shown that HAA concentrations are typically low when TTHM concentrations are low.
- The treated water total organic carbon (TOC) was in line with historical trends, with a median value of 1.95 mg/L. There is currently no guideline in the GCDWQ for TOC levels, however the USEPA suggests a treated water TOC concentration of < 2 mg/L as confirmation of effective treatment and disinfection by-product control.
- All treated water sampled were low in iron concentrations. Manganese concentrations exceeded slightly the aesthetic limit as per GCDWQ once in February at the water treatment plant The manganese health limit was never reached. Cusheon Lake is known for the potential of seasonally high iron and manganese concentrations. Such exceedances can lead to water discolouration.

- The aesthetic limit for water temperature (15ºC) was exceeded from May until October. This is a common occurrence in this water system during the summer months.

Table 1 and 2 below provide a summary of the 2023 raw and treated water test results.

Water Quality data collected from this drinking water system can be reviewed on the CRD website:

https://www.crd.bc.ca/about/data/drinking-water-quality-reports

OPERATIONAL HIGHLIGHTS

The following is a summary of the major operational issues that were addressed during the 2023 operating period:

- Water System leak repairs:
  - 100 Stewart Rd (July), resulted in draining the reservoir and was BWA issued
  - 367 Cusheon Lake Rd (July)
  - 215 Creekside Drive (November)
  - 1499 Beddis Rd (October)
- Water Reservoir maintenance
  - Lower Sky Valley (Lautman) Reservoir, 336 Sky Valley Rd (December), was cleaned and inspected.
- Water Treatment Plant corrective maintenance:
  - Backwash Valve Actuators failed. As a result, operators manually backwash the filters. Actuator corrective maintenance is scheduled in 2024.
  - Local Control Panel HOA (Hand-Off-Auto) switches were replaced due to electrical failure.

CAPITAL IMPROVEMENTS

The following is a summary of the major capital improvements, including year-ending spending for 2023:

Water Intake Assessment/Design (CE.676.7501): The intake pumps have been drawing in air/gas, resulting in reduced flow and even air-locking of the pump(s).

Project	Spending
Budget	$238,725
Project Management	($18,085)
Design (Engineering, Drafting, etc.)	($37,194)
Construction	($0)
Balance Remaining	**$183,446**

Safe Work Procedures (CE.699.4503): The work includes reviewing and developing safe work procedures for operational and maintenance tasks, and ongoing capital improvements.

Project	Spending
Budget	$12,000
Project Management	($605)
Contract	($2,478)
Supplies/Materials	($209)
Balance Remaining	**$8,708**

Back-up Power Design (CE.735.4502): Complete electrical designs for new onsite backup power.

Project	Spending
Budget	$10,000
Project Management	($49)
Balance Remaining	**$9,951**

Sky Valley New Booster Pump & Reservoir (CE.831.5101): The work includes designs for a new booster pump and reservoir as the Sky Valley Upper Reservoir is reaching the end of its useful life. A new reservoir will be built next to the existing Sky Valley Lower Reservoir as well as a booster pump to service the Upper Sky Valley pressure zone.

Project	Spending
Budget	$33,000
Project Management	($2,361)
Contract	($0)
Supplies/Materials	($0)
Balance Remaining	**$30,639**

Beddis WTP Lifting Apparatus (CE.836.2001): Support for a lifting apparatus is required at ceiling level to lift the 80lb lid for the saturator and for a confined space entry apparatus over the DAF system:

Project	Spending
Budget	$55,000
Project Management	($1,887)
Contract	($0)
Supplies/Materials	($0)
Balance Remaining	**$53,113**

Beddis PRV Strainers (CE.836.2002): Install inline strainer Stewart Road PRS and Creekside Road PRS. Strainers provide a measure of filtration to minimize maintenance and assurance of supply of water.

Project	Spending
Budget	$11,000
Project Management	($1,405)
Contract	($0)
Supplies/Materials	($0)
Balance Remaining	**$9,595**

Replacement of Variable Frequency Drives (CE.836.2003): The VFDs require replacement. This project results in new capacitors for the VFDs for the two booster pumps. New capacitors will extend the life of the VFDs several more years.

Project	Spending
Budget	$9,000
Project Management	($3,144)
Supplies/Materials	($4,023)
Balance Remaining	**$1,833**

2023 FINANCIAL REPORT

Please refer to the attached 2023 Statement of Operations and Reserve Balances.

Revenue includes parcel taxes (Transfers from Government), fixed user fees (User Charges), water sales (Sale-Water), interest on savings (Interest earnings), transfers from the Operating Reserve Fund, and miscellaneous revenue such as late payment charges (Other revenue).

Expenses include all costs of providing the service. General Government Services include budget preparation, financial management, utility billing and risk management services. CRD Labour and Operating Costs include CRD staff time as well as the costs of equipment, tools, and vehicles. Debt servicing costs are interest and principal payments on long-term debt. Other Expenses include all other costs to administer and operate the water system, including insurance, supplies, water testing, and electricity.

The difference between Revenue and Expenses is reported as Net revenue (expenses). Any transfers to or from capital or reserve funds for the service (Transfers to own funds) are deducted from this amount, and it is then added to any surplus or deficit carried forward from the prior year, yielding an Accumulated Surplus (or deficit). In alignment with Local Government Act Section 374 (11), any deficit must be carried forward and included in the next year's financial plan.

WATER SYSTEM PROBLEMS - WHO TO CALL:

To report any event or to leave a message regarding the Beddis Water System, call either:

CRD water system emergency call centre: **1-855-822-4426 (toll free)**
1-250-474-9630 (toll)
CRD water system general enquiries (toll free): **1-800-663-4425**

When phoning with respect to an emergency, please specify to the operator, the service area in which the emergency has occurred.

Submitted by:	Jason Dales, Senior Manager B.Sc, WD IV, Infrastructure Operations
	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
	Dan Ovington, BBA , Senior Manager, Salt Spring Island Electoral Area
	Angela Linwood, CPA, CMA, Controller, Financial Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

Appendix A: 2023 Statement of Operations and Reserve Balances

For questions related to this Annual Report please email: saltspring@crd.bc.ca

Table 1: 2023 Summary of Raw Water Test Results, Beddis Water System

PARAMETER		2023 ANALYTICAL RESULTS				CANADIAN GUIDELINES	2013 - 2022 ANALYTICAL RESULTS			
Parameter Name	Units of Measure	Annual Median	Samples Analyzed	Range Minimum	Range Maximum	≤ = Less than or equal to	Median	Samples Analyzed	Range Minimum	Range Maximum
Physical Parameters/Biological										
Colour, True	TCU	**14**	17	10	34	≤ 15 AO	16	130	6	35
Hardness as $CaCO_3$	mg/L	**36.85**	4	33.8	39.9	No Guideline Required	35.5	39	17.9	42
pH	pH Units	**7.2**	3	6.1	7.1	7.0-10.5 AO	7.2	33	6.1	7.7
Carbon, Total Organic	mg/L	**4.7**	12	3.7	5.4		4.3	69	1.5	6.57
Turbidity	NTU	**0.7**	17	0.5	3.0		0.93	176	< 0.14	11
Water Temperature	Degrees C	**16**	41	5.1	25.5	≤ 15 AO	13.3	581	3	26.6
Microbial Parameters										
Indicator Bacteria										
Coliform, Total	CFU/100 mL	**92**	17	5	360		57	172	<1	7200
E. coli	CFU/100 mL	**< 1**	17	< 1	32		< 1	174	<1	122
Hetero. Plate Count, 7 day	CFU/1 mL	Not tested in 2023					1200	64	170	11900
Parasites										
Cryptosporidium , Total oocysts	oocysts/100 L	**< 1**	2	< 1	< 1	Zero detection desirable	<1	18	<1	4.4
Giardia , Total cysts	cysts/100 L	**< 1**	2	< 1	< 1	Zero detection desirable	<1	18	<1	<1
Algal Toxins										
Microcystin (Abraxis)	ug/L	Not tested in 2023				1.5 MAC	<1	19	<1	<1
Anatoxin A	ug/L	Last analyzed in 2014					0.085	2	< 0.01	< 0.16
Cylindrospermopsin	ug/L	Last analyzed in 2014					0.055	2	< 0.01	< 0.1
Microcystin-RR	ug/L	Last analyzed in 2014					0.085	2	< 0.01	< 0.16
Microcystin-YR	ug/L	Last analyzed in 2014					0.085	2	< 0.01	< 0.16
Microcystin-LR	ug/L	Last analyzed in 2014					0.09	2	< 0.02	< 0.16
Total Microcystins	ug/L	Last analyzed in 2016				1.5 MAC	<0.14	5	<0.01	0.2
Nodularin	ug/L	Last analyzed in 2014					0.055	2	< 0.01	< 0.1
Metals										
Aluminum	ug/L as Al	**13.5**	4	5.4	74.8	2900 MAC / 100 OG	14.2	39	< 3	267
Antimony	ug/L as Sb	**< 0.5**	4	< 0.5	< 0.5	6 MAC	< 0.5	39	< 0.5	1.8
Arsenic	ug/L as As	**0.305**	4	0.24	0.36	10 MAC	0.29	39	< 0.1	0.76
Barium	ug/L as Ba	**6.2**	4	5.4	6.8	100 MAC	6.4	39	4.1	13
Beryllium	ug/L as Be	**< 0.1**	4	< 0.1	< 0.1		< 0.1	39	< 0.1	< 3
Bismuth	ug/L as Bi	**< 1**	4	< 1	< 1		< 1	35	< 1	< 1
Boron	ug/L as B	**< 50**	4	< 50	< 50	5000 MAC	< 50	39	< 5	412
Cadmium	ug/L as Cd	**< 0.01**	4	< 0.01	< 0.01	7 MAC	< 0.01	39	< 0.01	< 0.1
Calcium	mg/L as Ca	**10.07**	4	9.39	11.1	No Guideline Required	9.7	39	5.34	11.6
Chromium	ug/L as Cr	**< 1**	4	< 1	< 1	50 MAC	< 1	39	< 1	< 10
Cobalt	ug/L as Co	**< 0.2**	4	< 0.2	< 0.2		< 0.2	39	< 0.2	< 20
Copper	ug/L as Cu	**9.43**	4	6.6	12.1	2000 MAC / ≤ 1000 AO	7.14	39	4.21	32.5
Iron	ug/L as Fe	**159.5**	4	54.5	182	≤ 300 AO	138	39	< 10	389
Lead	ug/L as Pb	**0.68**	4	0.45	0.78	5 MAC	<0.5	39	0.29	2.76
Lithium	ug/L as Li	**< 2**	4	< 2	< 2		< 2	24	< 2	< 5
Magnesium	mg/L as Mg	**2.83**	4	2.52	2.95	No Guideline Required	2.63	39	1.1	3.14
Manganese	ug/L as Mn	**31.25**	4	20.1	75.9	120 MAC / ≤ 20 AO	37.2	39	10.5	111
Molybdenum	ug/L as Mo	**< 1**	4	< 1	< 1		< 1	39	< 1	< 20
Nickel	ug/L as Ni	**< 1**	4	< 1	< 1		< 1	39	< 1	< 50
Potassium	mg/L as K	**0.5365**	4	0.52	0.588		0.523	39	0.148	0.754
Selenium	ug/L as Se	**< 0.1**	4	< 0.1	< 0.1	50 MAC	< 0.1	39	< 0.1	< 0.5
Silicon	mg/L as Si	**3280**	4	3120	4280		3840	39	427	5880
Silver	ug/L as Ag	**< 0.02**	4	< 0.02	< 0.02	No Guideline Required	< 0.02	39	< 0.02	< 10
Sodium	mg/L as Na	**6.825**	4	5.76	8.19	≤ 200 AO	5.995	38	1.71	7.41
Strontium	ug/L as Sr	**75.25**	4	65	80.5	7000 MAC	68.9	39	18.1	86
Sulfur	mg/L as Si	**< 3**	4	< 3	3.1		< 3	35	< 3	5.7
Tin	ug/L as Sn	**< 5**	4	< 5	< 5		< 5	39	< 5	< 20
Titanium	ug/L as Ti	**< 5**	4	< 5	< 5		< 5	39	< 5	10.5
Thallium	ug/L as Tl	**< 0.01**	4	< 0.01	< 0.01		< 0.01	35	< 0.01	< 0.05
Uranium	ug/L as U	**< 0.1**	4	< 0.1	< 0.1	20 MAC	< 0.1	35	< 0.1	< 0.1
Vanadium	ug/L as V	**< 5**	4	< 5	< 5		< 5	39	< 5	< 10
Zinc	ug/L as Zn	**8.75**	4	7.1	17	≤ 5000 AO	8.9	39	3	200
Zirconium	ug/L as Zr	**< 0.1**	4	< 0.1	0.19		< 0.1	35	< 0.1	< 0.5

Table 2: 2023 Summary of Treated Water Test Results, Beddis Water System										
PARAMETER		2023 ANALYTICAL RESULTS				CANADIAN GUIDELINES	2013 - 2022 ANALYTICAL RESULTS			
Parameter Name	Units of Measure	Annual Median	Samples Analyzed	Range Minimum	Range Maximum	≤ = Less than or equal to	Median	Samples Analyzed	Range Minimum	Range Maximum
ND means Not Detected by analytical method used										
Physical Parameters										
Carbon, Total Organic	mg/L as C	**1.95**	12	1.5	2.3	Guideline Archived	2	93	0.27	5.3
Colour, True	TCU	**< 2**	52	< 2	6	≤ 15 AO	< 2	159	0.8	7
Hardness as $CaCO_3$	mg/L	**39.15**	16	33.4	50.2	No Guideline Required	37.4	104	29.8	53.1
pH	pH units	**6.3**	7	6.2	7.5	7.0-10.5 AO	6.86	33	6.5	9.03
Turbidity	NTU	**0.15**	52	0.1	0.7	1.0 MAC	0.15	244	0.07	3.6
Water Temperature	Degress C	**12**	324	2	26.5	≤ 15 AO	11.5	3647	0.5	26
Microbial Parameters										
Indicator Bacteria										
Coliform, Total	CFU/100 mL	**< 1**	107	< 1	1	0 MAC	0	727	0	4
E. coli	CFU/100 mL	**< 1**	107	< 1	< 1	0 MAC	0	726	0	< 1
Hetero. Plate Count, 7 day	CFU/1 mL	Not tested in 2023					#N/A	#N/A	#N/A	#N/A
Algal Toxins										
Anatoxin A	ug/L	Last analyzed in 2014					< 0.16	1	< 0.16	< 0.16
Cylindrospermopsin	ug/L	Last analyzed in 2014					< 0.1	1	< 0.1	< 0.1
Microcystin-RR	ug/L	Last analyzed in 2014					< 0.16	1	< 0.16	< 0.16
Microcystin-YR	ug/L	Last analyzed in 2014					< 0.16	1	< 0.16	< 0.16
Microcystin-LR	ug/L	Last analyzed in 2014					< 0.16	1	< 0.16	< 0.16
Total Microcystins	ug/L	Last analyzed in 2015				1.5 MAC	< 0.14	4	< 0.14	< 0.16
Nodularin	ug/L	Last analyzed in 2014					< 0.1	1	< 0.1	< 0.1
Disinfectants										
Disinfectants										
Chlorine, Free Residual	mg/L as Cl2	**0.79**	329	0.2	2.3	No Guideline Required	0.92	3845	0.04	2.5
Chlorine, Total Residual	mg/L as Cl_2	**1.39**	51	0.4	2.2	No Guideline Required	1.06	3597	0.07	7
Disinfection By-Products										
Trihalomethanes (THMs)										
Bromodichloromethane	ug/L	**11**	24	7.2	14		11	7	9.8	18
Bromoform	ug/L	**< 1**	24	< 1	< 1		< 1	115	< 0.1	< 1
Chloroform	ug/L	**50.5**	24	34	83		56	7	49	83
Chlorodibromomethane	ug/L	**1.45**	24	< 1	2.4		1.3	7	< 1	3.4
Total Trihalomethanes	ug/L	**63.5**	24	42	98	100 MAC	69	115	6.91	170
Haloacetic Acids (HAAs)										
HAA5	ug/L	Not tested in 2023				80 MAC	32.5	21	13	231.6
Metals										
Aluminum	ug/L as Al	**7.65**	16	3.3	14.5	2900 MAC / 100 OG	10.4	105	< 3	346
Antimony	ug/L as Sb	**< 0.5**	16	< 0.5	< 0.5	6 MAC	< 0.5	1	< 0.5	< 0.5
Arsenic	ug/L as As	**0.21**	16	0.13	0.25	10 MAC	0.31	1	0.31	0.31
Barium	ug/L as Ba	**5.8**	16	4.3	6.2	100 MAC	5.7	104	4	18
Beryllium	ug/L as Be	**< 0.1**	16	< 0.1	< 0.1		< 0.1	104	< 0.1	< 3
Bismuth	ug/L as Bi	**< 1**	16	< 1	< 1		< 1	100	< 1	< 1
Boron	ug/L as B	**< 50**	16	< 50	< 50	5000 MAC	< 50	104	< 50	505
Cadmium	ug/L as Cd	**< 0.01**	16	< 0.01	< 0.01	7 MAC	< 0.01	104	< 0.01	0.1
Calcium	mg/L as Ca	**11.4**	16	9.13	18.3	No Guideline Required	10.7	104	8.06	19.4
Chromium	ug/L as Cr	**< 1**	16	< 1	< 1	50 MAC	< 1	104	< 1	10
Cobalt	ug/L as Co	**< 0.2**	16	< 0.2	< 0.2		< 0.2	1	< 0.2	< 0.2
Copper	ug/L as Cu	**7.755**	16	0.77	21.1	2000 MAC / ≤ 1000 AO	9.84	104	0.66	127
Iron	ug/L as Fe	**16.45**	16	< 5	55.6	≤ 300 AO	19.2	104	< 5	2650
Lead	ug/L as Pb	**0.255**	16	< 0.2	2.09	5 MAC	0.3	4	< 0.2	0.49
Lithium	ug/L as Li	**< 2**	16	< 2	< 2		< 2	52	< 2	< 5
Magnesium	mg/L as Mg	**2.535**	16	0.586	3.03	No Guideline Required	2.485	104	0.922	3.07
Manganese	ug/L as Mn	**6.3**	16	1.1	22.4	120 MAC / ≤ 20 AO	8.55	104	< 1	73.9
Molybdenum	ug/L as Mo	**< 1**	16	< 1	< 1		< 1	1	< 1	< 1
Nickel	ug/L as Ni	**< 1**	16	< 1	< 1		< 1	1	< 1	< 1
Potassium	mg/L as K	**0.557**	16	0.45	0.603		0.5325	104	< 0.03	0.735
Selenium	ug/L as Se	**< 0.1**	16	< 0.1	< 0.1	50 MAC	< 0.1	1	< 0.1	< 0.1
Silicon	mg/L as Si	**3295**	16	2940	4070		3210	1	3210	3210
Silver	ug/L as Ag	**< 0.02**	16	< 0.02	< 0.02	No Guideline Required	< 0.02	1	< 0.02	< 0.02
Sodium	mg/L as Na	**9.385**	16	7.88	10.9	≤ 200 AO	8.71	104	6.89	10.4
Strontium	ug/L as Sr	**79.65**	16	67.7	87.5	7000 MAC	88.8	1	88.8	88.8
Sulfur	mg/L as Si	**< 3**	16	< 3	3.8		< 3	100	< 3	4.2
Tin	ug/L as Sn	**< 5**	16	< 5	< 5		< 5	104	< 5	< 20
Titanium	ug/L as Ti	**< 5**	16	< 5	< 5		< 5	104	< 5	< 10
Thallium	ug/L as Tl	**< 0.01**	16	< 0.01	< 0.01		< 0.01	1	< 0.01	< 0.01
Uranium	ug/L as U	**< 0.1**	16	< 0.1	< 0.1	20 MAC	< 0.1	100	< 0.1	< 0.1
Vanadium	ug/L as V	**< 5**	16	< 5	< 5		< 5	104	< 5	< 10
Zinc	ug/L as Zn	**< 5**	16	< 5	22.8	≤ 5000 AO	7.35	104	< 5	1160
Zirconium	ug/L as Zr	**< 0.1**	16	< 0.1	< 0.1		< 0.1	52	< 0.1	< 0.5

CAPITAL REGIONAL DISTRICT

BEDDIS WATER
Statement of Operations (Unaudited)
For the Year Ended December 31, 2023

		2023	2022
Revenue			
Transfers from government		80,318	74,960
User Charges		130,693	115,261
Sale - Water		73,580	65,531
Other revenue from own sources:			
Interest earnings		92	132
Transfer from Operating Reserve		14,000	8,000
Other revenue		5,384	445
Total Revenue		304,067	264,329
Expenses			
General government services		9,002	8,778
Contract for Services		7,742	80,932
CRD Labour and Operating costs		110,784	34,709
Debt Servicing Costs		35,408	43,066
Capital Purchases		21,661	-
Other expenses		64,408	48,653
Total Expenses		249,005	216,138
Net revenue (expenses)		55,062	48,191
Transfers to own funds:			
Capital Reserve Fund		55,062	33,191
Operating Reserve Fund		-	15,000
Annual surplus/(deficit)		-	-
Accumulated surplus/(deficit), beginning of year		-	-
Accumulated surplus/(deficit), end of year	$	-	-

CAPITAL REGIONAL DISTRICT

BEDDIS WATER
Statement of Reserve Balances (Unaudited)
For the Year Ended December 31, 2023

	Capital Reserve 2023	2022
Beginning Balance	4,198	23,782
Transfer from Operating Budget	55,062	33,191
Transfers from Completed Capital Projects	-	10,099
Transfer to Capital Project	(43,000)	(62,725)
Interest Income (Expense)	(387)	(149)
Ending Balance	15,873	4,198

	Operating Reserve 2023	2022
Beginning Balance	17,170	9,752
Transfer from Operating Budget	-	15,000
Transfer to Operating Budget	(14,000)	(8,000)
Interest Income	846	418
Ending Balance	4,016	17,170