



WATER TREATMENT PLANT & DISTRIBUTION SYSTEM



Operations Performance Annual Report 2023

Facility Numbers 529 & 155

OVERVIEW

Port Hardy, with a population of 4,132 residents and over 5,000 connected to the infrastructure is located at the northern end of Vancouver Island. In May 2000 the water treatment plant was commissioned and established Port Hardy's reputation for having some of British Columbia's best water quality.

Port Hardy's source water is the Tsulquate River. The water from this river is tinted brown from tannins and other leachates. Port Hardy's Water Treatment Plant uses a Dissolved Air Flotation (DAF) system which is very effective in treating highly colored water. Treatment is achieved using ISOPAC 6 and Soda Ash to remove the color, particles, sediment and organics that are present. A filter aid, Hydrofloc 400 is added in trace amounts after the DAF treatment and prior to the filters to improve coagulation of fine particles. Filtration is done through a mixed media consisting silica sand and anthracite. Lime slurry, carbon dioxide and sodium hypochlorite are injected post filtration for alkalinity, pH adjustment and disinfection.

In 2020, the plant continued to produce a very high level of treatment providing excellent water quality to the District of Port Hardy.

PERMIT TO OPERATE

The Port Hardy water treatment plant is a Level III facility as deemed by the Environmental Operators Certification Program (EOCP), certification number 529. The distribution system is a Level III system with a certification number of 155.

CERTIFIED OPERATORS

The Operational Permit from Vancouver Island Health Authority Operational requires that a certified operator is employed to match the Water Treatment Plant Certification, a level III plant. The District currently employs a Level IV operator and two, Level III operators. The District also employs two Level III Water Distribution Operator.

Operator	Title	Certification
Joe Jewell	Utilities Supervisor	WT IV, WD III, WWT II, WWC II
Justin Reusch	Chief Operator	WT III, WD III, WWT II, WWC I
Roland LeFort	Operator	WWT III, WT III, WD I
Cory Henschke	Operator	WWT I, WD II
Robert Cousins	Operator	WT I, WWT II, Cross Connection
Patrick Traverse	Operator	WWT I
Owain Jewell	Labourer III	Not Certified

WATER TREATMENT PLANT

Throughout 2020, there were times where due to heavy rains and high river colour events, that the water treatment process was upset. In these events, the plant is taken offline and no water is pumped to the reservoir. Water is only pumped to the reservoirs once the treatment plant's process quality is restored. This will result in lower than desired reservoir levels but quality will not be compromised.

CAPITAL PROJECTS

Most capital projects in 2022 were delayed due to supply chain issues. Labour was limited due to the Coronavirus pandemic. The filter header repair project was postponed due to another project taking priority. The engineering is planned for 2023. A new treated water pump was ordered in 2021. After several delays from the supplier, all the parts have arrived. Final commissioning will occur in early 2023. A new heat pump was installed at the water plant this summer. The unit's electrical breakers arrived in late December. The system will help keep the electrical room cooler, reducing the amount of blown fuses due to heat.

HIGHLIGHTS:

- No violations to permit in 2023
- 1585 ML of water were produced in 2023
- Quarterly samples for THMs and HAAs all returned within acceptable limits
- All bacteriological testing came back within expected parameters
- A Stage 1 water use restriction as per Port Hardy Water Conservation Bylaw No. 06-2005. A Stage 3 was later implemented and held after the normal October cutoff due to a lack of precipitation
- Several power outages occurred in 2023
- All flocculation and DAF tanks were taken offline for maintenance in January. Bearings were replaced and headers cleaned
- The backwash valve at the water plant was rebuilt this year. It was determined that it was failing to close completely resulting in stress on filter backwash plumbing. Xpert Valve was hired to assist the Utilities operators with the rebuild.

WATER DISTRIBUTION SYSTEM

In 2020, the District of Port Hardy commenced on a major upgrade to the water distribution system in the Storey's Beach area. A new 2000 cubic meter (m³) reservoir was constructed on Fort Rupert Road and 3000 meters of distribution pipe was replaced. The replacement distribution pipe was also increased in size from 150mm and 250mm to 300mm and 350mm. Additional hydrants were also installed ensuring a fire flow of 150 Litres/second where required. The Fort Rupert Reservoir site is equipped with backup power generation and chlorine disinfection booster pumps. The reservoir level is controlled by an altitude control valve which keeps the tank at a predetermined level within 1.5 meters. A rolling diaphragm pressure reducing valve is also installed on site to regulate the pressure in the event the reservoir is offline. The entire site can be monitored remotely from the water treatment.

CAPITAL PROJECTS

- Drinking water fountains were purchased are to be installed at the skatepark, tennis court, visitor's centre, Stink Creek Park, Storey's Beach Park and the library
- An assessment of the Kains Lake dam was started in late 2022 beginning in 2023
- Bear Cove communications commenced but were delayed by the availability of our communications contractor
- A secondary road was established into the water treatment plant

ADDITIONAL HIGHLIGHTS:

- Fire hydrants were "B" Serviced this year
- Water main clearing continued to keep our infrastructure accessible
- Backflow preventors were all tested and serviced
- Emergency power generators were serviced and load bank tested in October
- Cold weather in late December caused high water demands. Many commercial users had broken lines that unnecessarily wasted water for several days. Operator spent many hours locating these leaks and contacting the property owners to reduce water consumption
- A large main break occurred in the Cedar Heights Trailer Park in February. Utilities operators were aware of the situation but were having difficulties locating it. After daylight, a call was received from a homeowner in the park that there was a "river" in the backyard. The entire park was shut down to make repairs
- An inspection of the Kains Lake and Water Treatment Plant were conducted by the Ministry of Environment
- Mapping of the water distribution system continued. As the operators were able to locate infrastructure, work orders were created to follow up and update the mapping
- A hydrant in Carrot Park was replaced this year. To do the excavation, an archaeologist was retained as well as representatives from the Kwakiutl Nation
- A hydrant was replaced at the corner of Carnarvon Road and Park Drive. It was determined that the hydrant was impacted with a motor vehicle and underground flange was damaged
- A large leak was repaired in Carnarvon Place
- A new water meter was installed on the service line to the Kwakiutl First Nation

- Two large leaks were repaired on Carnarvon Road. The leak detection equipment was deployed to accurately determine where the break was and where to excavate
- Several service leaks were repaired throughout the District including Scott Street
- The low pressure transmitter at Holgrem PRV was replaced this fall. A small water outage was needed. Water was restored after approximately 30 minutes

CROSS CONNECTION CONTROL

A formal Cross Connection Control program created by Maintenance Tracking Systems Inc (MTS) was presented to the District of Port Hardy in late 2010. Currently, backflow preventers are installed in all high risk areas of the treatment plants, sewage liftstations with a washdown hose, public sani dumps and public gardens. In August, all District Backflow assemblies were tested and recertified.

WATER WISE PROGRAM CONTINUATION

A total of 167 water meters are being read including commercial users and multi-family dwellings. All new homes and constructions will have meter setters installed as part of this program. Continuing public education around proposed metering/rate changes and general information on water wise initiatives was conducted and will be ongoing until all users are metered. In 2016, new watering restrictions as per Port Hardy Water Conservation Bylaw No. 06-2005 were adopted. As part of the water system upgrade in 2018, water meter setters were installed on all single-family dwellings on Beaver Harbour Road as new service lines were run to the property line.

Continuing from 2021, touch read meters have either been replaced or modified to be radio read meters. This has greatly reduced the amount of time required to read the meters for billing.

WATERSHED PROTECTION PLAN

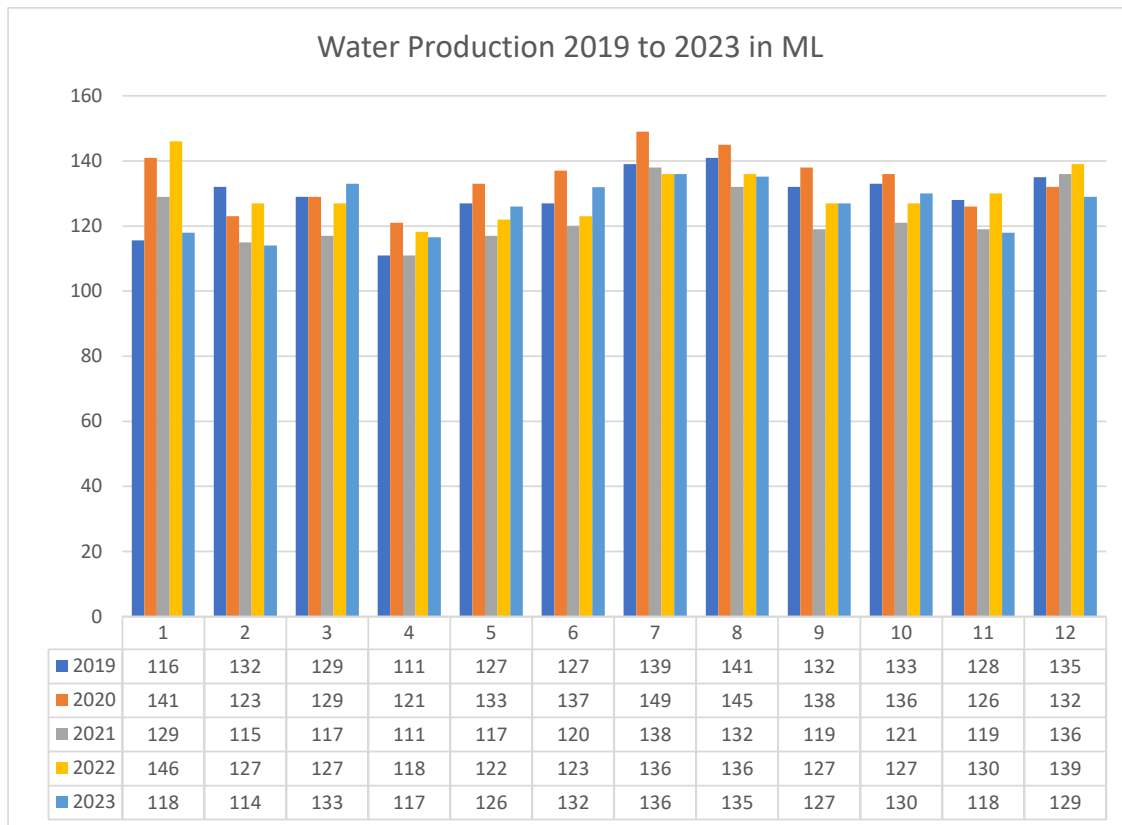
The District of Port Hardy has taken steps to implement a watershed protection plan. The purpose of this is to create a plan that guides users in the best management and preservation of the Tsulquate River and Kains Lake watershed as a drinking water source for the District of Port Hardy. The plan will develop a public awareness, identify stakeholders, increase knowledge and public awareness of the watershed and develop procedures for an emergency response.

RAW AND TREATED WATER PRODUCTION

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Raw Water Pumped in ML	121	121	138	120	130	137	141	140	136	142	126	133	1585
Treated Water Production in ML	118	114	133	117	126	132	136	135	127	130	118	129	1514
Rainfall in mm	156	195	107	130	8.9	31.3	48	39.7	78.6	75.1	128.9	297.9	1297
Backwashes	38	33	40	30	36	34	38	36	32	36	33	35	421

CHEMICAL USAGE

	January	February	March	April	May	June	July	August	September	October	November	December	Total
ISOPAC 6 Coagulant in kg	5258	5073	4326	4122	3472	2772	3248	3789	4454	5929	7206	6487	56137
Soda Ash in kg	1589	1725	1476	1271	749	522	568	840	953	1703	2429	1998	15822
Filter Aid (LT20) in kg	0.77	0.85	0.81	0.67	0.72	0.71	0.23	0.23	0.24	0.24	0.66	0.75	6.89
Salt for Chlorine Generator in kg	560	700	700	500	400	780	700	1096	420	900	620	480	7856
Liquid Sodium Hypochlorite 12% in kg	0	0	0	0	66	0	0	0	0	0	0	0	66
Lime in kg	2549	2351	2922	2644	2868	2365	2832	2892	2536	2397	2471	2397	31225
Carbon Dioxide in kg	2471	2723	3770	3478	4117	3879	5030	4071	2961	3584	3002	2541	41627



DISTRIBUTION WATER QUALITY AND BACTERIOLOGICAL RESULTS

January					February					March				
Location	Date	Free Chlorine mg/L	Turbidity NTU	pH	Location	Date	Free Chlorine mg/L	Turbidity NTU	pH	Location	Date	Free Chlorine mg/L	Turbidity NTU	pH
Chatham Avenue	01/03/23	0.6	0.31	7.9	Chatham Avenue	02/06/23	0.5	0.15	8.1	Chatham Avenue	03/06/23	0.6	0.17	7.9
	01/09/23	0.5	0.23	7.8		02/13/23	0.5	0.28	8.1		03/13/23	0.5	0.19	8.0
	01/16/23	0.5	0.16	7.9		02/21/23	0.5	0.19	8.0		03/20/23	0.6	0.19	8.0
	01/23/23	0.5	0.21	8.0		02/27/23	0.5	0.18	8.0		03/27/23	0.6	0.19	8.0
	01/30/23	0.4	0.30	8.1										
Peel Street Liftstation	01/03/23	0.6	0.20	7.7	Peel Street Liftstation	02/06/23	0.7	0.14	7.8	Peel Street Liftstation	03/06/23	0.7	0.21	7.5
	01/09/23	0.5	0.32	7.6		02/13/23	0.8	0.20	7.7		03/13/23	0.7	0.20	7.7
	01/16/23	0.6	0.19	7.7		02/21/23	0.7	0.19	7.6		03/20/23	0.8	0.22	7.8
	01/23/23	0.7	0.24	7.7		02/27/23	0.7	0.27	7.9		03/27/23	0.8	0.27	7.7
	01/30/23	0.6	0.25	7.6										
Airport Wastewater Treatment Plant	01/03/23	0.3	0.38	7.9	Airport Wastewater Treatment Plant	02/06/23	0.3	0.27	7.9	Airport Wastewater Treatment Plant	03/06/23	0.4	0.24	7.7
	01/09/23	0.4	0.25	7.8		02/13/23	0.6	0.36	7.9		03/13/23	0.6	0.24	7.8
	01/16/23	0.4	0.20	7.8		02/21/23	0.2	0.31	7.9		03/20/23	0.6	0.23	7.8
	01/23/23	0.4	0.25	7.7		02/27/23	0.5	0.32	7.8		03/27/23	0.6	0.23	7.8
	01/30/23	0.4	0.33	7.8										
Public Works Yard	01/03/23	0.4	0.19	8.3	Public Works Yard	02/06/23	0.4	0.17	8.2	Public Works Yard	03/06/23	0.9	0.17	7.4
	01/09/23	0.5	0.21	8.2		02/13/23	0.3	0.25	8.2		03/13/23	0.8	0.18	7.7
	01/16/23	0.8	0.24	7.7		02/21/23	0.5	0.19	8.0		03/20/23	0.9	0.23	7.8
	01/23/23	0.5	0.19	8.0		02/27/23	0.5	0.19	8.2		03/27/23	0.4	0.18	8.1
	01/30/23	0.5	0.25	8.1										
Eagleview School	01/03/23	0.2	0.32	7.9	Eagleview School	02/06/23	0.8	0.20	7.9	Eagleview School	03/06/23	0.6	0.19	7.7
	01/09/23	0.3	0.29	7.7		02/13/23	0.5	0.23	8.0		03/13/23	0.6	0.20	8.0
	01/16/23	0.3	0.14	8.0		02/21/23	0.7	0.24	7.6		03/20/23	0.6	0.24	8.0
	01/23/23	0.6	0.20	7.9		02/27/23	0.6	0.28	8.1		03/27/23	0.5	0.23	8.1
	01/30/23	0.5	0.21	8.2										
Bear Cove Reservoir	01/03/23	0.5	0.22	7.7	Bear Cove Reservoir	02/06/23	0.6	0.15	7.8	Bear Cove Reservoir	03/06/23	0.7	0.18	7.5
	01/09/23	0.6	0.25	7.6		02/13/23	0.6	0.82	7.8		03/13/23	0.6	0.2	7.7
	01/16/23	0.5	0.15	7.7		02/21/23	0.6	0.22	7.7		03/20/23	0.7	0.2	7.9
	01/23/23	0.4	0.22	7.7		02/27/23	0.7	0.22	7.8		03/27/23	0.6	0.27	7.8
	01/30/23	0.5	0.19	7.7										
Ferry Terminal	01/03/23	0.3	0.20	7.7	Ferry Terminal	02/06/23	0.5	0.16	7.8	Ferry Terminal	03/06/23	0.7	0.26	7.5
	01/09/23	0.5	0.31	7.8		02/13/23	0.7	0.50	7.8		03/13/23	0.6	0.26	7.7
	01/16/23	0.6	0.17	7.7		02/21/23	0.7	0.22	7.7		03/20/23	0.7	0.20	7.8
	01/23/23	0.4	0.21	7.7		03/02/23	0.7	0.18	7.5		03/27/23	0.6	0.22	7.8
	01/30/23	0.5	0.21	7.7										
Highway 19 PRV	01/03/23	0.7	0.23	7.7	Highway 19 PRV	02/06/23	0.9	0.23	7.9	Highway 19 PRV	03/06/23	1.0	0.23	7.4
	01/09/23	0.9	0.41	7.5		02/13/23	1.0	0.23	7.8		03/13/23	0.8	0.28	7.5
	01/16/23	0.8	0.14	7.7		02/21/23	0.9	0.23	7.8		03/20/23	0.9	0.32	7.7
	01/23/23	0.8	0.27	7.8		02/27/23	0.9	0.22	7.8		03/27/23	0.9	0.25	7.8
	01/30/23	0.8	0.31	7.7										
Average		0.5	0.24	7.8	Average		0.6	0.25	7.9	Average		0.7	0.22	7.8
Minimum		0.2	0.14	7.5	Minimum		0.2	0.14	7.5	Minimum		0.4	0.17	7.4
Maximum		0.9	0.41	8.5	Maximum		1.0	0.82	8.2	Maximum		1.0	0.32	8.1
April					May					June				
Location	Date	Free Chlorine mg/L	Turbidity (NTU)	pH	Location	Date	Free Chlorine mg/L	Turbidity NTU	pH	Location	Date	Free Chlorine mg/L	Turbidity NTU	pH
Chatham Avenue	04/03/23	0.6	0.18	7.9	Chatham Avenue	05/01/23	0.5	0.21	7.8	Chatham Avenue	06/05/23	0.5	0.17	7.5
	04/11/23	0.5	0.17	7.9		05/08/23	0.7	0.16	7.8		06/12/23	0.7	0.18	7.2
	04/17/23	0.5	0.18	7.8		05/15/23	0.4	0.20	8.0		06/19/23	0.6	0.19	7.1
	04/24/23	0.5	0.21	7.4		05/22/23	0.3	0.20	7.9		06/26/23	0.5	0.21	7.9
Peel Street Liftstation	04/03/23	0.8	0.22	7.6	Peel Street Liftstation	05/29/23	0.4	0.17	7.7	Peel Street Liftstation	06/05/23	0.6	0.16	7.4
	04/11/23	0.7	0.16	7.6		05/01/23	0.6	0.23	7.7		06/12/23	0.9	0.19	7.2
	04/17/23	0.7	0.19	7.5		05/08/23	0.9	0.17	7.8		06/19/23	0.7	0.15	7.1
	04/24/23	0.7	0.16	7.3		05/15/23	0.6	0.15	7.9		06/26/23	0.8	0.16	7.6
						05/22/23	0.4	0.23	7.8					
Airport Wastewater Treatment Plant	04/03/23	0.8	0.42	7.7	Airport Wastewater Treatment Plant	05/29/23	0.5	0.17	7.6	Airport Wastewater Treatment Plant	06/05/23	0.3	0.18	7.5
	04/11/23	0.5	0.27	7.7		05/01/23	0.4	0.30	7.7		06/12/23	0.5	0.35	7.2
	04/17/23	0.4	0.22	7.7		05/08/23	0.7	0.26	7.8		06/19/23	0.4	0.18	7.1
	04/24/23	0.5	0.26	7.6		05/15/23	0.3	0.22	7.9		06/26/23	0.4	0.33	7.8
						05/22/23	0.4	0.27	7.8					
Public Works Yard	04/03/23	0.4	0.23	8.2	Public Works Yard	05/29/23	0.3	0.23	7.6	Public Works Yard	06/05/23	0.3	0.16	7.8
	04/11/23	0.4	0.18	8.1		05/01/23	0.8	0.21	7.8		06/12/23	0.4	0.18	7.6
	04/17/23	0.3	0.21	8.2		05/08/23	0.6	0.19	8.0		06/19/23	0.2	0.18	7.4
	04/24/23	0.4	0.20	8.1		05/15/23	0.6	0.23	7.9		06/26/23	0.2	0.25	8.5
						05/22/23	0.2	0.24	8.4					
Eagleview School	04/03/23	0.4	0.23	8.0	Eagleview School	05/29/23	0.5	0.17	7.9	Eagleview School	06/05/23	0.5	0.19	7.7
	04/11/23	0.3	0.31	8.0		05/01/23	0.3	0.20	8.1		06/12/23	0.6	0.19	7.4
	04/17/23	0.5	0.23	7.9		05/08/23	0.5	0.19	8.0		06/19/23	0.3	0.29	7.4
	04/24/23	0.4	0.20	7.9		05/15/23	0.4	0.38	8.1		06/26/23	0.4	0.25	8.0
						05/22/23	0.3	0.17	8.1					
Bear Cove Reservoir	04/03/23	0.7	0.18	7.6	Bear Cove Reservoir	05/29/23	0.4	0.34	7.9	Bear Cove Reservoir	06/05/23	0.5	0.24	7.3
	04/11/23	0.8	0.25	7.6		05/01/23	0.6	0.21	7.7		06/12/23	0.8	0.17	7.3
	04/17/23	0.6	0.24	7.6		05/08/23	0.9	0.20	7.7		06/19/23	0.5	0.20	7.1
	04/24/23	0.6	0.20	7.3		05/15/23	0.5	0.18	7.8		06/26/23	0.5	0.22	7.8
						05/22/23	0.3	0.27	7.8					
Ferry Terminal	04/03/23	0.7	0.23	7.6	Ferry Terminal	05/29/23	0.5	0.20	7.6	Ferry Terminal	06/05/23	0.6	0.20	7.4
	04/11/23	0.6	0.18	7.5		05/01/23	0.5	0.21	7.9		06/12/23	0.7	0.22	7.1
	04/17/23	0.6	0.20	7.6		05/08/23	0.8	0.22	7.7		06/19/23	0.5	0.17	7.2
	04/24/23	0.5	0.18	7.3		05/15/23	0.6	0.16	7.8		06/26/23	0.4	0.19	7.7
						05/22/23	0.3	0.18	7.8					
Highway 19 PRV	04/03/23	1.0	0.35	8.0	Highway 19 PRV	05/29/23	0.5	0.32	7.6	Highway 19 PRV	06/05/23	0.9	0.23	7.4
	04/11/23	0.9	0.26	7.6		05/01/23	1.0	0.42	7.7		06/12/23	0.9	0.34	7.3
	04/17/23	0.8	0.23	7.6		05/08/23	1.0	0.23	7.7		06/19/23	0.7	0.27	7.3
	04/24/23	1.0	0.20	7.6		05/15/23	0.6	0.21	8.0		06/26/23	0.9	0.33	7.8
						05/22/23	0.7	0.23	7.6					
Average		0.6	0.22	7.7	Average		0.5	0.23	7.8	Average		0.5	0.22	7.5
Minimum		0.3	0.16	7.3	Minimum		0.2	0.15	7.6	Minimum		0.2	0.15	7.1
Maximum		1.0	0.42	8.2	Maximum		1.0	0.42	8.4	Maximum		0.9	0.35	8.5

January						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
01/19/23	Hospital	0.6	0.33	7.7	L1	L1
01/23/23	Fort Rupert Reservoir	0.7	0.22	7.7	L1	L1
01/23/23	Chatham Ave.	0.5	0.21	8.0	L1	L1
01/23/23	Bear Cove Reservoir	0.4	0.22	7.7	L1	L1
01/19/23	Highway 19 PRV	0.9	0.22	7.6	L1	L1
01/19/23	Pioneer Inn	0.9	0.22	7.6	L1	L1
01/23/23	Public Works Yard	0.6	0.19	8.0	L1	L1
01/23/23	Glen Lyon Restaurant	0.9	0.21	7.7	L1	L1
01/19/23	Airport Inn	0.4	0.39	7.7	L1	L1
01/19/23	Peel St Liftstation	0.5	0.23	7.6	L1	L1
01/23/23	B.C. Ferry	0.4	0.21	7.7	L1	L1

February						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
02/13/23	Hospital	0.9	0.24	8.0	L1	L1
02/13/23	Fort Rupert Reservoir	0.8	0.47	7.8	L1	L1
02/06/23	Chatham Ave.	0.5	0.15	8.1	L1	L1
02/13/23	Bear Cove Reservoir	0.6	0.82	7.8	L1	L1
02/13/23	Highway 19 PRV	1.0	0.23	7.8	L1	L1
02/06/23	Pioneer Inn	0.9	0.21	7.9	L1	L1
02/06/23	Public Works Yard	0.4	0.17	8.2	L1	L1
02/13/23	Glen Lyon Restaurant	1.0	0.20	7.8	L1	L1
02/13/23	Airport Inn	0.2	0.24	7.7	L1	L1
02/13/23	Peel St Liftstation	0.8	0.20	7.7	L1	L1
02/06/23	B.C. Ferry	0.5	0.16	7.8	L1	L1

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
01/19/23	Tsulquate River (Untreated)		1.48	6.9		

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
02/13/23	Tsulquate River (Untreated)		0.64	6.6		

March						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
03/20/23	Hospital	0.8	0.23	8.0	L1	L1
03/06/23	Fort Rupert Reservoir	0.9	0.24	7.4	L1	L1
03/13/23	Chatham Ave.	0.5	0.19	8.0	L1	L1
03/06/23	Bear Cove Reservoir	0.7	0.18	7.5	L1	L1
03/06/23	Highway 19 PRV	1.0	0.23	7.4	L1	L1
03/20/23	Pioneer Inn	1.0	0.24	7.8	L1	L1
03/06/23	Public Works Yard	0.9	0.17	7.4	L1	L1
03/20/23	Glen Lyon Restaurant	0.9	0.23	7.7	L1	L1
03/13/23	Airport Inn	0.2	0.22	7.6	L1	L1
03/20/23	Peel St Liftstation	0.8	0.22	7.8	L1	L1
03/13/23	B.C. Ferry	0.6	0.26	7.7	L1	L1

April						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
04/11/23	Hospital	0.6	0.34	7.6	L1	L1
04/03/23	Fort Rupert Reservoir	0.8	0.22	7.7	L1	L1
04/11/23	Chatham Ave.	0.5	0.17	7.9	L1	L1
04/03/23	Bear Cove Reservoir	0.7	0.18	7.6	L1	L1
04/03/23	Highway 19 PRV	1.0	0.35	8.0	L1	L1
04/17/23	Pioneer Inn	0.8	0.18	7.5	L1	L1
04/03/23	Public Works Yard	0.4	0.23	8.2	L1	L1
04/11/23	Glen Lyon Restaurant	0.9	0.21	7.5	L1	L1
04/17/23	Airport Inn	0.3	0.22	7.7	L1	L1
04/17/23	Peel St Liftstation	0.7	0.19	7.5	L1	L1
04/11/23	B.C. Ferry	0.6	0.18	7.5	L1	L1

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
03/13/23	Tsulquate River (Untreated)		0.59	6.4		

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
04/17/23	Tsulquate River (Untreated)		0.45	6.8		

May						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
05/01/23	Hospital	0.5	0.20	7.8	L1	L1
05/08/23	Fort Rupert Reservoir	1.0	0.20	7.7	L1	L1
05/01/23	Chatham Ave.	0.5	0.21	7.8	L1	L1
05/15/23	Bear Cove Reservoir	0.5	0.18	7.8	L1	L1
05/15/23	Highway 19 PRV	0.6	0.21	8.0	L1	L1
05/01/23	Pioneer Inn	0.9	0.22	7.7	L1	L1
05/08/23	Public Works Yard	0.6	0.19	8.0	L1	L1
05/08/23	Glen Lyon Restaurant	1.2	0.19	7.8	L1	L1
05/01/23	Airport Inn	0.5	0.25	7.7	L1	L1
05/15/23	Peel St Liftstation	0.6	0.15	7.9	L1	L1
05/08/23	B.C. Ferry	0.8	0.22	7.7	L1	L1

June						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
06/05/23	Hospital	0.5	0.21	7.6	L1	L1
06/12/23	Fort Rupert Reservoir	0.7	0.19	7.4	L1	L1
06/05/23	Chatham Ave.	0.5	0.17	7.5	L1	L1
06/19/23	Bear Cove Reservoir	0.5	0.20	7.1	L1	L1
06/19/23	Highway 19 PRV	0.7	0.27	7.3	L1	L1
06/05/23	Pioneer Inn	0.8	0.18	7.6	L1	L1
06/12/23	Public Works Yard	0.4	0.18	7.6	L1	L1
06/12/23	Glen Lyon Restaurant	1.0	0.24	7.4	L1	L1
06/05/23	Airport Inn	0.4	0.18	7.7	L1	L1
06/19/23	Peel St Liftstation	0.7	0.15	7.1	L1	L1
06/12/23	B.C. Ferry	0.7	0.22	7.1	L1	L1

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
05/15/23	Tsulquate River (Untreated)		0.59	7.1		

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
06/19/23	Tsulquate River (Untreated)		0.29	6.2		

July						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
07/04/23	Hospital	0.5	0.20	7.8	L1	L1
07/10/23	Fort Rupert Reservoir	0.4	0.19	7.8	L1	L1
07/04/23	Chatham Ave.	0.2	0.41	8.0	L1	L1
07/17/23	Bear Cove Reservoir	0.4	0.19	7.9	L1	L1
07/17/23	Highway 19 PRV	0.9	0.20	7.9	L1	L1
07/04/23	Pioneer Inn	0.7	0.18	7.6	L1	L1
07/10/23	Public Works Yard	0.3	0.23	8.2	L1	L1
07/10/23	Glen Lyon Restaurant	0.9	0.23	7.6	L1	L1
07/04/23	Airport Inn	0.4	0.21	7.9	L1	L1
07/17/23	Peel St Liftstation	0.7	0.26	7.8	L1	L1
07/10/23	B.C. Ferry	0.4	0.17	7.7	L1	L1

August						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
08/08/23	Hospital	0.4	0.20	7.5	L1	L1
08/14/23	Fort Rupert Reservoir	0.3	0.20	7.7	L1	L1
08/08/23	Chatham Ave.	0.3	0.19	7.6	L1	L1
08/21/23	Bear Cove Reservoir	0.2	0.18	7.8	L1	L1
08/21/23	Highway 19 PRV	0.9	0.22	7.7	L1	L1
08/08/23	Pioneer Inn	0.7	0.19	7.3	L1	L1
08/14/23	Public Works Yard	0.4	0.21	7.8	L1	L1
08/14/23	Glen Lyon Restaurant	0.6	0.19	7.7	L1	L1
08/08/23	Airport Inn	0.4	0.22	7.5	L1	L1
08/21/23	Peel St Liftstation	0.9	0.18	7.9	L1	L1
08/14/23	B.C. Ferry	0.3	0.21	7.6	L1	L1

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
07/17/23	Tsulquate River (Untreated)		0.28	7.3		

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
08/21/23	Tsulquate River (Untreated)		0.22	7.2		

September						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
09/05/23	Hospital	0.5	0.21	7.8	L1	L1
09/11/23	Fort Rupert Reservoir	0.6	0.21	7.8	L1	L1
09/05/23	Chatham Ave.	0.6	0.21	8.0	L1	L1
09/05/23	Bear Cove Reservoir	0.5	0.22	7.8	L1	L1
09/18/23	Highway 19 PRV	0.8	0.20	7.6	L1	L1
09/05/23	Pioneer Inn	0.8	0.24	7.7	L1	L1
09/18/23	Public Works Yard	0.2	0.17	8.5	L1	L1
09/11/23	Glen Lyon Restaurant	0.7	0.19	7.8	L1	L1
09/11/23	Airport Inn	0.3	0.19	7.8	L1	L1
09/18/23	Peel St Liftstation	0.5	0.21	7.7	L1	L1
09/11/23	B.C. Ferry	0.5	0.24	7.9	L1	L1

October						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
10/03/23	Hospital	0.6	0.18	7.7	L1	L1
10/10/23	Fort Rupert Reservoir	0.6	0.17	7.7	L1	L1
10/03/23	Chatham Ave.	0.1	0.23	8.2	L1	L1
10/16/23	Bear Cove Reservoir	0.6	0.19	7.5	L1	L1
10/16/23	Highway 19 PRV	0.8	0.19	7.4	L1	L1
10/03/23	Pioneer Inn	0.8	0.20	7.7	L1	L1
10/10/23	Public Works Yard	0.3	0.14	8.0	L1	L1
10/10/23	Glen Lyon Restaurant	0.8	0.22	7.6	L1	L1
10/03/23	Airport Inn	0.4	0.23	7.8	L1	L1
10/16/23	Peel St Liftstation	0.5	0.18	7.7	L1	L1
10/10/23	B.C. Ferry	0.4	0.20	7.6	L1	L1

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
09/18/23	Tsulquate River (Untreated)		0.27	7.1		

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
10/16/23	Tsulquate River (Untreated)		0.95	6.7		

November						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
06/11/23	Hospital	0.5	0.31	7.8	<1	<1
14/11/23	Fort Rupert Reservoir	0.8	0.19	7.7	<1	<1
06/11/23	Chatham Ave.	0.3	0.24	7.7	<1	<1
20/11/23	Bear Cove Reservoir	0.6	0.26	7.7	<1	<1
14/11/23	Highway 19 PRV	0.9	0.22	7.7	<1	<1
06/11/23	Pioneer Inn	1.0	7.6	<1	<1	<1
14/11/23	Public Works Yard	0.8	0.18	7.7	<1	<1
20/11/23	Glen Lyon Restaurant	0.9	0.19	7.6	<1	<1
06/11/23	Airport Inn	0.5	0.27	7.8	<1	<1
14/11/23	Peel St Liftstation	0.8	0.18	7.7	<1	<1
20/11/23	B.C. Ferry	0.4	0.19	7.7	<1	<1

December						
Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
18/12/23	Hospital	0.7	0.21	7.6	<1	<1
04/12/23	Fort Rupert Reservoir	0.8	0.30	7.6	<1	<1
11/12/23	Chatham Ave.	0.3	0.20	7.7	<1	<1
18/12/23	Bear Cove Reservoir	0.7	0.19	7.6	<1	<1
04/12/23	Highway 19 PRV	0.9	0.37	7.8	<1	<1
04/12/23	Pioneer Inn	0.9	0.20	7.8	<1	<1
11/12/23	Public Works Yard	0.7	0.24	7.5	<1	<1
18/12/23	Glen Lyon Restaurant	0.9	0.20	7.5	<1	<1
04/12/23	Airport Inn	0.5	0.21	7.8	<1	<1
11/12/23	Peel St Liftstation	0.6	0.22	7.6	<1	<1
11/12/23	B.C. Ferry	0.5	0.20	7.4	<1	<1

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
20/11/23	Tsulquate River (Untreated)		0.55	6.8		

Sample Date	Sample Location	Free Chlorine (mg/L)	Turbidity (NTU)	pH	Total Coliform CFU/100ml	E.Coli CFU/100ml
18/12/23	Tsulquate River (Untreated)		0.56	6.8		

QUARTERLY THM/HAA RESULTS



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Analytical Report

Bill To: District of Port Hardy Water & Wastewater Division 8900 Park Drive Port Hardy, BC, Canada V0N 2P0 Attn: Joe Jewell Sampled By: Company: District of Port Hardy	Project ID: Project Name: THM/HAA Sampling for Quarter #1 2023 Project Location: LSD: P.O.: Proj. Acct. code:	Lot ID: 1625831 Control Number: Date Received: Jan 13, 2023 Date Reported: Jan 21, 2023 Report Number: 2834613
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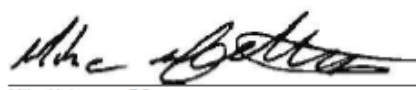
	Reference Number	Sample Date	Sample Time	Sample Location	Sample Description	Sample Matrix
	1625831-1	January 09, 2023	NA		WTP Reservoir / 8.7°C	Water
Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline	Comments
Trihalomethanes Screen - Water						
Chloroform	mg/L	0.026	0.001			
Bromodichloromethane	mg/L	0.001	0.001			
Dibromochloromethane	mg/L	<0.001	0.001			
Bromoform	mg/L	<0.001	0.001			
Total Trihalomethanes	mg/L	0.027	0.001	0.1		Below MAC
Trihalomethanes - Surrogate Recovery						
Dibromofluoromethane	EPA Surrogate %	104	50-140			
Toluene-d8	EPA Surrogate %	97	50-140			
Bromofluorobenzene	EPA Surrogate %	99	50-140			
Haloacetic Acids - Water						
Monochloroacetic Acid	µg/L	<2.0	2.0			
Monobromoacetic Acid	µg/L	<2.0	2.0			
Dichloroacetic Acid	µg/L	11.1	2.0			
Trichloroacetic Acid	µg/L	11.5	2.0			
Bromochloroacetic Acid	µg/L	<2.0	2.0			
Dibromoacetic Acid	µg/L	<2.0	2.0			
Total Haloacetic Acids (HAA6)	µg/L	22.6	12.0	80		Below MAC
2,3-Dibromopropionic acid	%	86	50-150			

Analytical Report

Bill To: District of Port Hardy Water & Wastewater Division 8900 Park Drive Port Hardy, BC, Canada V0N 2P0	Project ID: Project Name: THM/HAA Sampling for Quarter #1 2023 Project Location: LSD: P.O.: Proj. Acct. code:	Lot ID: 1625831 Control Number: Date Received: Jan 13, 2023 Date Reported: Jan 21, 2023 Report Number: 2834613
Attn: Joe Jewell Sampled By: Company: District of Port Hardy		

Reference Number	1625831-2
Sample Date	January 09, 2023
Sample Time	NA
Sample Location	
Sample Description	Chatham Ave. / 8.7°C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Trihalomethanes Screen - Water					
Chloroform	mg/L	0.043	0.001		
Bromodichloromethane	mg/L	0.002	0.001		
Dibromochloromethane	mg/L	<0.001	0.001		
Bromoform	mg/L	<0.001	0.001		
Total Trihalomethanes	mg/L	0.045	0.001	0.1	Below MAC
Trihalomethanes - Surrogate Recovery					
Dibromofluoromethane	EPA Surrogate %	102	50-140		
Toluene-d8	EPA Surrogate %	99	50-140		
Bromofluorobenzene	EPA Surrogate %	100	50-140		
Haloacetic Acids - Water					
Monochloroacetic Acid	µg/L	2.1	2.0		
Monobromoacetic Acid	µg/L	<2.0	2.0		
Dichloroacetic Acid	µg/L	16.3	2.0		
Trichloroacetic Acid	µg/L	24.7	2.0		
Bromochloroacetic Acid	µg/L	<2.0	2.0		
Dibromoacetic Acid	µg/L	<2.0	2.0		
Total Haloacetic Acids (HAA6)	µg/L	43.2	12.0	80	Below MAC
2,3-Dibromopropionic acid	%	78	50-150		

Approved by: 
Mike Yohemas, BSc
General Manager

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Analytical Report

Bill To: District of Port Hardy Water & Wastewater Division 8900 Park Drive Port Hardy, BC, Canada V0N 2P0 Attn: Joe Jewell Sampled By: O. Jewell Company: District of Port Hardy	Project ID: April 2023-Q2 Project Name: THM/HAA Project Location: LSD: P.O.: 7208 Proj. Acct. code:	Lot ID: 1643929 Control Number: Date Received: Apr 13, 2023 Date Reported: Apr 21, 2023 Report Number: 2861611
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Reference Number	1643929-1
Sample Date	April 12, 2023
Sample Time	11:05
Sample Location	
Sample Description	WTP Reservoir / 7.8 °C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Trihalomethanes Screen - Water					
Chloroform	mg/L	0.026	0.001		
Bromodichloromethane	mg/L	0.001	0.001		
Dibromochloromethane	mg/L	<0.001	0.001		
Bromoform	mg/L	<0.001	0.001		
Total Trihalomethanes	mg/L	0.027	0.001	0.1	Below MAC
Trihalomethanes - Surrogate Recovery					
Dibromofluoromethane	EPA Surrogate %	112	50-140		
Toluene-d8	EPA Surrogate %	98	50-140		
Bromofluorobenzene	EPA Surrogate %	101	50-140		
Haloacetic Acids - Water					
Monochloroacetic Acid	µg/L	<2.0	2.0		
Monobromoacetic Acid	µg/L	<2.0	2.0		
Dichloroacetic Acid	µg/L	8.7	2.0		
Trichloroacetic Acid	µg/L	9.6	2.0		
Bromochloroacetic Acid	µg/L	<2.0	2.0		
Dibromoacetic Acid	µg/L	<2.0	2.0		
Total Haloacetic Acids (HAA6)	µg/L	18.3	12.0	80	Below MAC
2,3-Dibromopropionic acid	%	85	50-150		

Analytical Report

Bill To: District of Port Hardy Water & Wastewater Division 8900 Park Drive Port Hardy, BC, Canada V0N 2P0 Attn: Joe Jewell	Project ID: April 2023-Q2 Project Name: THM/HAA Project Location: LSD: P.O.: 7208 Proj. Acct. code:	Lot ID: 1643929 Control Number: Date Received: Apr 13, 2023 Date Reported: Apr 21, 2023 Report Number: 2861811
Sampled By: O. Jewell Company: District of Port Hardy		

Reference Number	1643929-2
Sample Date	April 12, 2023
Sample Time	11:30
Sample Location	
Sample Description	Chatham Ave. / 7.8 °C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Trihalomethanes Screen - Water					
Chloroform	mg/L	0.055	0.001		
Bromodichloromethane	mg/L	0.002	0.001		
Dibromochloromethane	mg/L	<0.001	0.001		
Bromoform	mg/L	<0.001	0.001		
Total Trihalomethanes	mg/L	0.057	0.001	0.1	Below MAC
Trihalomethanes - Surrogate Recovery					
Dibromofluoromethane	EPA Surrogate %	111	50-140		
Toluene-d8	EPA Surrogate %	100	50-140		
Bromofluorobenzene	EPA Surrogate %	100	50-140		
Haloacetic Acids - Water					
Monochloroacetic Acid	µg/L	<2.0	2.0		
Monobromoacetic Acid	µg/L	<2.0	2.0		
Dichloroacetic Acid	µg/L	17.8	2.0		
Trichloroacetic Acid	µg/L	23.9	2.0		
Bromochloroacetic Acid	µg/L	<2.0	2.0		
Dibromoacetic Acid	µg/L	<2.0	2.0		
Total Haloacetic Acids (HAA6)	µg/L	41.7	12.0	80	Below MAC
2,3-Dibromopropionic acid	%	81	50-150		

Approved by:



Max Hewitt
Operations Manager

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Analytical Report

Bill To: District of Port Hardy Water & Wastewater Division 8900 Park Drive Port Hardy, BC, Canada V0N 2P0	Project ID: Project Name: Project Location: LSD: P.O.: Proj. Acct. code:	Lot ID: 1664559 Control Number: Date Received: Jul 12, 2023 Date Reported: Jul 19, 2023 Report Number: 2892890
Attn: Joe Jewell		
Sampled By: Robert Cousins		
Company: District of Port Hardy		

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Reference Number 1664559-1					
Sample Date July 11, 2023					
Sample Time NA					
Sample Location					
Sample Description Reservoir / 12.1 °C					
Sample Matrix Water					
VOC Screen - Water					
Bromodichloromethane	µg/L	2.3	0.5		
Bromofom	µg/L	<0.5	0.5		
Chlorofom	µg/L	27.7	0.5		
Dibromochloromethane	µg/L	<0.5	0.5		
Total Trihalomethanes	µg/L	30.0			
VOC - Water - Surrogate Recovery					
Bromofluorobenzene	EPA Surrogate %	104	50-140		
Dibromofluoromethane	EPA Surrogate %	109	50-140		
Toluene-d8	EPA Surrogate %	110	50-140		
Haloacetic Acids - Water					
Monochloroacetic Acid	µg/L	<2.0	2.0		
Monobromoacetic Acid	µg/L	<2.0	2.0		
Dichloroacetic Acid	µg/L	9.3	2.0		
Trichloroacetic Acid	µg/L	11.0	2.0		
Bromochloroacetic Acid	µg/L	<2.0	2.0		
Dibromoacetic Acid	µg/L	<2.0	2.0		
Total Haloacetic Acids (HAA5)	µg/L	20.3	12.0	80	Below MAC
2,3-Dibromopropionic acid	%	85	50-150		

Analytical Report

Bill To: District of Port Hardy
Water & Wastewater Division
8900 Park Drive
Port Hardy, BC, Canada
V0N 2P0
Attn: Joe Jewell
Sampled By: Robert Cousins
Company: District of Port Hardy

Project ID:
Project Name:
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1664559**
Control Number:
Date Received: Jul 12, 2023
Date Reported: Jul 19, 2023
Report Number: 2892890

Reference Number	1664559-2
Sample Date	July 11, 2023
Sample Time	NA
Sample Location	
Sample Description	Chatham / 12.1 °C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
VOC Screen - Water					
Bromodichloromethane	µg/L	4.1	0.5		
Bromoform	µg/L	<0.5	0.5		
Chloroform	µg/L	67.7	0.5		
Dibromochloromethane	µg/L	<0.5	0.5		
Total Trihalomethanes	µg/L	71.8			
VOC - Water - Surrogate Recovery					
Bromofluorobenzene	EPA Surrogate %	99	50-140		
Dibromofluoromethane	EPA Surrogate %	111	50-140		
Toluene-d8	EPA Surrogate %	110	50-140		
Haloacetic Acids - Water					
Monochloroacetic Acid	µg/L	2.3	2.0		
Monobromoacetic Acid	µg/L	<2.0	2.0		
Dichloroacetic Acid	µg/L	22.4	2.0		
Trichloroacetic Acid	µg/L	26.0	2.0		
Bromochloroacetic Acid	µg/L	<2.0	2.0		
Dibromoacetic Acid	µg/L	<2.0	2.0		
Total Haloacetic Acids (HAA5)	µg/L	50.7	12.0	80	Below MAC
2,3-Dibromopropionic acid	%	89	50-150		

Approved by:



Mike Yohemas, BSc
General Manager

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Analytical Report

Bill To: District of Port Hardy Water & Wastewater Division 8900 Park Drive Port Hardy, BC, Canada V0N 2P0	Project ID: October 2023 Project Name: THM/HAA Project Location: LSD: P.O.: 7706 Proj. Acct. code:	Lot ID: 1687039 Control Number: Date Received: Oct 18, 2023 Date Reported: Oct 25, 2023 Report Number: 2927917
Attn: Joe Jewell Sampled By: Justin Reusch Company: District of Port Hardy		

Reference Number	1687039-1
Sample Date	October 17, 2023
Sample Time	12:00
Sample Location	
Sample Description	Reservoir / 9.8 °C
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
VOC Screen - Water					
Bromodichloromethane	µg/L	2.0	0.5		
Bromoform	µg/L	<0.5	0.5		
Chloroform	µg/L	34.0	0.5		
Dibromochloromethane	µg/L	<0.5	0.5		
Total Trihalomethanes	µg/L	35.9			
VOC - Water - Surrogate Recovery					
Bromofluorobenzene	EPA Surrogate %	105	50-140		
Dibromofluoromethane	EPA Surrogate %	88	50-140		
Toluene-d8	EPA Surrogate %	111	50-140		
Haloacetic Acids - Water					
Monochloroacetic Acid	µg/L	2.4	2.0		
Monobromoacetic Acid	µg/L	<2.0	2.0		
Dichloroacetic Acid	µg/L	15.0	2.0		
Trichloroacetic Acid	µg/L	18.6	2.0		
Bromochloroacetic Acid	µg/L	<2.0	2.0		
Dibromoacetic Acid	µg/L	<2.0	2.0		
Total Haloacetic Acids (HAA5)	µg/L	36.0	12.0	80	Below MAC
2,3-Dibromopropionic acid	%	89	50-150		



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Analytical Report

Bill To: District of Port Hardy Water & Wastewater Division 8900 Park Drive Port Hardy, BC, Canada V0N 2P0	Project ID: October 2023 Project Name: THM/HAA Project Location: LSD: P.O.: 7706 Proj. Acct. code:	Lot ID: 1687039 Control Number: Date Received: Oct 18, 2023 Date Reported: Oct 25, 2023 Report Number: 2927917
Attn: Joe Jewell		
Sampled By: Justin Reusch		
Company: District of Port Hardy		

Reference Number	1687039-2
Sample Date	October 17, 2023
Sample Time	12:00
Sample Location	Chatham / 9.8 °C
Sample Description	
Sample Matrix	Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
VOC Screen - Water					
Bromodichloromethane	µg/L	3.4	0.5		
Bromofom	µg/L	<0.5	0.5		
Chloroform	µg/L	82.7	0.5		
Dibromochloromethane	µg/L	<0.5	0.5		
Total Trihalomethanes	µg/L	86.1			
VOC - Water - Surrogate Recovery					
Bromofluorobenzene	EPA Surrogate %	106	50-140		
Dibromofluoromethane	EPA Surrogate %	98	50-140		
Toluene-d8	EPA Surrogate %	107	50-140		
Haloacetic Acids - Water					
Monochloroacetic Acid	µg/L	3.5	2.0		
Monobromoacetic Acid	µg/L	<2.0	2.0		
Dichloroacetic Acid	µg/L	24.1	2.0		
Trichloroacetic Acid	µg/L	39.2	2.0		
Bromochloroacetic Acid	µg/L	<2.0	2.0		
Dibromoacetic Acid	µg/L	<2.0	2.0		
Total Haloacetic Acids (HAA5)	µg/L	66.7	12.0	80	Below MAC
2,3-Dibromopropionic acid	%	88	50-150		

Approved by: 
 Max Hewitt
 Operations Manager

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