Annual Report
For the 2024 Operating Year

Wingham Drinking Water System
2024 Operation and Maintenance Annual Report

PREPARED BY

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TO

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Table of Contents

List of Tables

1.0 INTRODUCTION AND BACKGROUND

The purpose of the Annual Report is to document the operation and maintenance data for the Wingham Drinking Water System for review by the Ministry of the Environment Conservation and Parks in accordance with O. Reg. 170/03. This report covers January 1, 2024 to December 31, 2024. A copy of this report will be submitted to the owner to be uploaded to the Township's website and can be supplied, free of charge, to interested parties upon request.

2.0 DESCRIPTION OF WATER SYSTEM

The Wingham Drinking Water System (DWS # **220001502**), is characterized as a "secure ground water" system and is classified as a large municipal residential system. The system consists of two wells – Well 3 with a rated capacity of 6537 m3/day and Well 4 with a rated capacity of 5270 m3/d. Treatment at both sites consists of chlorination (sodium hypochlorite) and iron sequestration (sodium silicate) treatment. The Well 3 system is located at 200 Water St. Well #4 is located at 23 Albert St. The distribution system serves the community of Wingham with a population of approximately 2950 residents, 1150 customer services and 29 km of various size and material water main.

The system Is owned by the Corporation of the Township of North Huron and operated by Veolia Water Canada, the Operating Authority.

The Well 3 supply system consists of a 323 mm drilled to a depth of 102.1m fitted with variable speed pump capable of pumping the volume specified in the MECP Permit to Take Water. The raw water consistently has substantial naturally occurring hardness and relatively high iron content that requires sequestering to prevent discoloration in the distribution system which is typical of all drilled wells in the area. Chlorine, (a critical process) and an iron sequestering agent are added to the raw water prior to entry into a baffled contact tank that satisfies the chlorine contact time required with adequate chlorine residual to disinfect.

From the contact tank/reservoir the water flows to the distribution/standpipe that maintains adequate system pressure. The well is cycled by a level controller that starts and stops the well 3/high lift pumps. Emergency power is supplied by a portable diesel generator that allows operation of the equipment during extended power interruptions. The treated drinking water is monitored for chlorine residual and turbidity by on-line equipment connected to SCADA/auto dialer. The monitoring system will alert the on-call operator to respond if the set points are breached. The chlorine and turbidity analysis data levels are stored on a data logger.

The distribution system has elevated storage to maintain pressure. Critical processes to ensure safe water are adequate chlorination and maintenance of system pressure. The monitors activate an alarm through the auto-dialer if the set points are breached, as a critical feature well 3, high-lift 2 and well 4 are equipped with variable frequency drives that can be set to maintain system pressure setpoint in the even the standpipe is not in service.

Well #4 is a 356 mm drilled well, 98.65 m deep, complete with a stainless-steel liner and equipped with a submersible vertical turbine pump, well level sensor to measure static level and provide well level monitoring. The system has been designed to operate to alternate the duty wells between well 3 and 4.

The #4 well house is equipped with back-up diesel generator, sodium hypochlorite (2) and sodium silicate pump, a baffled chlorine contact tank equipped with 3 high lift pumps, on-line monitoring, alarm generation and auto-dialer.

Back-up power is supplied by one diesel standby generator with automatic transfer switch and double wall fuel tank.

The water quality is monitored and data-logged by a SCADA system with breaches of set-points going to an alarm dialer.

Disinfection is achieved on the Wingham well supply through the use of 12% sodium hypochlorite. In the well houses this chemical is added prior to the water entering the chlorine contact facilities at dosages high enough to achieve both primary and secondary disinfection objectives.

The distribution system is constructed with a combination of ductile iron, cast iron, PVC and high-density polyethylene piping with polyethylene, copper and galvanized steel services. There are known lead services, of which have been sampled at the initial plumbing sampling program, where no elevated levels were found due to the service material. The iron sequestering also has dual purpose of corrosion control, coupled with very stable pH and substantial alkalinity and hardness that inhibits corrosion that controls lead corrosion. These services will be replaced when street reconstruction takes place.

The system has approximately 135 fire hydrants.

The chlorine dosages range varies with the chlorine demand of the raw water.
The free chlorine residual is monitored at the point of entry to the distribution system, by an on-line chlorine analyzer, with a target residual of > 1.00 mg/l and < 1.30 mg/l.

The Wingham well supply Operates on PTTW # 1450-B38HKS which expires on August 1, 2028 which allows 11,807 cubic meters per day to be pumped from the combined wells.

The Wingham Drinking Water System (treatment Subsystem) has maximum flows as specified in the Municipal Drinking Water License (MDWL) 090-102, Issue 5 and Drinking Water Works Permit (DWWP) 090-202, Issue 5. The maximum total daily flow is 11,807 cubic meters per day.

The treated water is monitored by an on-line chlorine analyzer.

Typical system pressure ranges from 40 psi to 85 psi.

3.0 SUMMARY OF WATER QUALITY MONITORING

3.1 Water Treatment Equipment Operation and Monitoring

3.1.1 Point of Entry Chlorine Residual

Chlorine residuals are continuously measured using an online chlorine analyzer and verified for accuracy using hand-held HACH pocket colorimeter. **Table 1** shows the monthly average of the daily free chlorine residual value on the treated water at the point of entry.

3.1.2 Distribution Chlorine Residual

Chlorine residuals in the distribution system are checked daily using a HACH pocket colorimeter. In 2024, 473 distribution chlorine residuals were recorded.

Table 1. Treated & Distribution Residuals for Wingham Drinking Water System

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Min	Max	Average	Count
AVG W3 TW (POE) chlorine Residual mg/ L	1.36	1.30	1.37	1.41	1.51	1.55	1.57	1.57	1.59	1.74	1.54	1.49	**1.17**	**1.74**	**1.40**	**366**
AVG W4 TW (POE) chlorine Residual mg/ L	1.18	1.13	1.15	1.25	1.31	1.29	1.28	1.28	1.24	1.37	1.30	1.14	**0.94**	**1.46**	**1.24**	**366**
Average DW Residual mg/L	1.15	1.13	1.13	1.06	1.13	1.16	1.13	1.17	1.12	1.29	1.17	1.13	**0.55**	**1.65**	**1.12**	**473**

[a] – Results collected from January 1, 2024 – December 31, 2024

3.1.3 Turbidity

Treated Turbidity is measured daily using an online analyzer and raw water samples are analyzed using portable turbidimeters. **Table 2,** provides a summary of raw and treated turbidity results. The maximum turbidity measured in the treated water was 1.03 NTU, this reading was recorded from Well 3.

Table 2. Raw and Treated water Turbidity for Wingham Drinking Water System

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Min	Max	Average	Count
Avg. W3 RW Turb.	0.21	0.24	0.22	0.44	0.33	0.39	0.37	0.45	0.33	0.38	0.41	0.49	**0.17**	**0.49**	**0.30**	**51**
Avg. W3 TW Turb.	0.12	0.11	0.10	0.27	0.18	0.20	0.28	1.03	0.38	0.24	0.26	0.12	**0.06**	**1.03**	**0.12**	**366**
Avg. W4 RW Turb.	0.21	0.20	0.17	0.25	0.22	0.31	0.27	0.24	0.24	0.28	0.28	0.32	**0.10**	**0.46**	**0.25**	**53**
Avg. W4 TW Turb.	0.13	0.13	0.14	0.14	0.14	0.14	0.11	0.11	0.11	0.11	0.12	0.12	**0.05**	**0.31**	**0.12**	**366**

[a] – Results collected from January 1, 2024 – December 31, 2024

3.2 Microbiological Sampling

3.2.1 Raw Water Samples

Raw water samples are taken every week. In 2024, a total of 52 samples were collected and analyzed for E.Coli and Total Coliforms from Well 3 and **52** samples from Well 4. Each E. coli and Total Coliform result obtained was 0 cfu/100 ml in the raw water.

Table 3 and Table 3.1 provides a summary of bacteriological results performed on the raw water.

Table 3- Microbiological Results for Raw Water Well 3 Wingham Drinking Water System

	Total Coliform		E.Coli	
Date	# Samples	# Samples ≥1	# Samples	# Samples ≥1
Jan	5	0	5	0
Feb	4	0	4	0
Mar	4	0	4	0
Apr	5	0	5	0
May	4	0	4	0
Jun	4	0	4	0
Jul	4	0	4	0
Aug	4	0	4	0
Sep	4	0	4	0
Oct	5	0	5	0
Nov	4	0	4	0
Dec	5	0	5	0
Total	**52**	**0**	**52**	**0**

[a] – Results collected from January 1, 2024 – December 31, 2024

Table 3.1- Microbiological Results for Raw Water Well 4 Wingham Drinking Water System				
	Total Coliform		E.Coli	
Date	# Samples	# Samples ≥1	# Samples	# Samples ≥1
Jan	5	0	5	0
Feb	4	0	4	0
Mar	4	0	4	0
Apr	5	0	5	0
May	4	0	4	0
Jun	4	0	4	0
Jul	4	0	4	0
Aug	4	0	4	0
Sep	4	0	4	0
Oct	5	0	5	0
Nov	4	0	4	0
Dec	5	0	5	0
Total	**52**	**0**	**52**	**0**

[a] – Results collected from January 1, 2024 – December 31, 2024

3.2.2 Treated Water (Point of Entry) Samples

One treated water sample from the point of entry from Well 3 and Well 4 is taken every week and analyzed for E. Coli, Total Coliforms and for Heterotrophic Plate Count (HPC). A total of 104 treated water samples were collected and analyzed at Wells 3 and 4 for both E.Coli and Total Coliforms there were also 104 HPC samples collected from the Point of, all samples were found to be safe. Each E. Coli and total coliform result from the treated water was 0 cfu/100 ml. Currently, there is no limit on HPC samples, HPC samples can be used as an indication of interior pipe conditions where flushing is required when there are positive results. All (104) samples were found to be safe, with 0 results >50cfu/100ml. The range of HPC results were <10-50 cfu/100 ml.

Table 4 provides a summary of all bacteriological results performed on treated water.

Table 4- Microbiological Results for Point of Entry from The Wingham Drinking water system							
Date	#TC Samples	# Samples ≥1	#EC Samples	# Samples ≥1	#HPC Samples	Safe	Deteriorating =/>50
Jan	10	0	10	0	10	10	0
Feb	8	0	8	0	8	8	0

Mar	8	0	8	0	8	8	0
Apr	10	0	10	0	10	10	0
May	8	0	8	0	8	8	0
Jun	8	0	8	0	8	8	0
Jul	8	0	8	0	8	8	0
Aug	8	0	8	0	8	8	0
Sep	8	0	8	0	8	8	0
Oct	10	0	10	0	10	10	0
Nov	8	0	8	0	8	8	0
Dec	10	0	10	0	10	10	0
Total	**104**	**0**	**104**	**0**	**104**	**104**	**0**

[a] – Results collected from January 1, 2024 – December 31, 2024

3.2.3 Distribution System

Distribution samples are collected every week and tested for E. Coli, Total Coliform and for Heterotrophic Plate Count (HPC). In addition to regular samples, we collected 2 samples for a watermain installation. In 2024, a total of 161 distribution samples were collected and analyzed for both Total Coliforms and E. Coli. All E. Coli result from the treated water were 0cfu/100 ml. All but 1 Total Coliform Sample result was 0cfu/100ml, we had 1 AWQI from a Result in July that had a 2cfu/100ml result after re-samples were collected a 0cfu/100ml results was obtained. All Appropriate reporting took place to address the AWAQI. There was a total of 54 HPC samples with ranges between <10-50 cfu/100 ml and one HPC results was a "no data, overgrowth HPC". **Table 5** provides a summary of all bacteriological samples taken in the distribution system.

Table 5 Microbiological Results for Wingham Distribution System

Date	# Samples TC	# Samples ≥1	# Samples EC	# Samples ≥1	# Samples HPC	Safe	Deteriorating =/>50
Jan	17	0	17	0	6	6	0
Feb	12	0	12	0	4	4	0
Mar	12	0	12	0	4	4	0
Apr	15	0	15	0	5	5	0
May	12	0	12	0	4	4	0
Jun	12	0	12	0	4	4	0
Jul	15	1	15	0	5	5	0
Aug	12	0	12	0	4	4	0
Sep	12	0	12	0	4	4	0
Oct	15	0	15	0	5	5	0
Nov	12	0	12	0	4	3	1

Dec	15	0	15	0	5	5	0
Total	**161**	**1**	**161**	**0**	**54**	**53**	**1**

[a] – Results collected from January 1, 2024 – December 31, 2024

3.3 Chemical Sampling & Testing

3.3.1 Inorganics

One treated water sample is taken every 36 months and tested for inorganics. The most recent samples for the Wingham Drinking Water System were collected on May 14, 2024 and submitted to the laboratory for analysis of inorganics as listed in Schedule 23. All parameters were found to be within compliance. Inorganic Schedule 23 samples will be collected next in May 2027. Results from 2024 can be found in **Table 6.**

Table 6. Schedule 23 results for Wingham Drinking water system

Water Works Name:			Wingham Well Supply			
Well No. (if applicable):			Well # 4 & # 3			
Year:			2024			
Serviced Population			2845			
Laboratories Which Performer Analyses:			SGS Lakefield Research			
Water Works #			220001502			
	Analysis				Analysis	Maximum
	Date	Well 3	Well 4			Allowable Level
Parameter	(MM/DD/YY)	(ug/L)	(ug/L)		(ug/L)	(ug/L)
Schedule 23		May 14-24	May 14-24			
Antimony	May 14-24	0.6	0.6	<MDL		6
Arsenic	May 14-24	1.7	2.9			25
Barium	May 14-24	150	46.3			1000
Boron	May 14-24	24	31			5000
Cadmium	May 14-24	0.003	0.003	<MDL		5
Chromium	May 14-24	0.08	0.08	<MDL		50
Mercury	May 14-24	0.01	0.01	<MDL		1
Selenium	May 14-24	0.1	0.04	<MDL		10
Uranium	May 14-24	0.988	0.925			20

[a] – Results collected May 14, 2024

3.3.2 Lead. Alkalinity & pH

Schedule 15.1 of Ontario Regulation 170/03 requires that samples be taken during two seasons: once between December 15 and April 15 and once between June 15 and October 15. North Huron is on the reduced schedule for Lead therefore it only has to be tested every 3 years, samples will be collected again in 2025**.**

Table 7 – Lead Sampling Program Results for Wingham Drinking Water System

DW Lead/pH /Alkalinity	Wingham			
Date	**Location**	**pH**	**Alkalinity mg/L as CaCO3**	**Lead ug/L**
Mar 19-24	Park Dr & Angus	7.25	227	N/A
Mar 19-24	Leopold & Victoria	7.54	228	N/A
Sept 10-24	295 William st Hydrant	7.24	228	N/A
Sept 10-24	99 Kerr dr -rear-hydrant	7.21	229	N/A
	MACS	**6.5-8.5**	**30-500**	
*Lead every 3 years due 2025				

[a] – Samples collected on March 19, 2024 and September 10, 2024 respectively.

3.3.3 Organics

One treated water sample is taken every 36 months and tested for schedule 24 organic parameters. The most recent samples were collected on May 14, 2024. All parameters were found to be within compliance. Schedule 24 Samples will be collected again in May of 2027. 2024 sample results can be found in **Table 8.**

Table 8 – Schedule 24 Results for Wingham Drinking Water System

Water Works Name:	Wingham Well Supply
Well No. (if applicable):	Well # 4 & # 3
Year:	2024
Serviced Population	2845
Laboratories Which Performer Analyses:	SGS Lakefield Research
Water Works #	220001502

	Well # 3		**Well #4**		**Maximum AllowableLevel**
Parameter	**(ug/L)**		**(ug/L)**		**(ug/L)**
Schedule 23 & 24	May 14-24		May 14-24		
Benzene	0.32	<MDL	0.32	<MDL	5
Carbon Tetrachloride	0.17	<MDL	0.17	<MDL	5

1,2-Dichlorobenzene	0.41	<MDL	0.41	<MDL	200
1,4-Dichlorobenzene	0.36	<MDL	0.36	<MDL	5
1,1-Dichloroethylene	0.33	<MDL	0.33	<MDL	14
1,2-Dichloroethane	0.35	<MDL	0.35	<MDL	5
Dichloromethane	0.35	<MDL	0.35	<MDL	50
Monochlorobenzene	0.3	<MDL	0.3	<MDL	80
Tetrachloroethylene	0.35	<MDL	0.35	<MDL	10
Trichloroethylene	0.44	<MDL	0.44	<MDL	5
Vinyl Chloride	0.17	<MDL	0.17	<MDL	1
Diquat	1	<MDL	1	<MDL	70
Paraquat	1	<MDL	1	<MDL	10
Glyphosate	1	<MDL	1	<MDL	280
Polychlorinated Biphenyls	0.04	<MDL	0.04	<MDL	3
Benzo(a)pyrene	0.004	<MDL	0.004	<MDL	0.01
Alachlor	0.02	<MDL	0.02	<MDL	5
Atrazine+N-dealkylated metabolites	0.01	<MDL	0.01	<MDL	5
Atrazine	0.01	<MDL	0.01	<MDL	
De-ethylated atrazine	0.01	<MDL	0.01	<MDL	
Azinphos-methyl	0.05	<MDL	0.05	<MDL	20
					Maximum
	Well #3		**Well #4**		**Allowable Level**
Parameter	**(ug/L)**		**(ug/L)**		**(ug/L)**
Carbaryl	0.05	<MDL	0.05	<MDL	90
carbofuran	0.01	<MDL	0.01	<MDL	90
Chlorpyrifos	0.02	<MDL	0.02	<MDL	90
Diazinon	0.02	<MDL	0.02	<MDL	20
Dimethoate	0.06	<MDL	0.06	<MDL	20
Diuron	0.03	<MDL	0.03	<MDL	150
Malathion	0.02	<MDL	0.02	<MDL	190
Metolachlor	0.01	<MDL	0.01	<MDL	50
Metribuzin	0.02	<MDL	0.02	<MDL	80
Phorate	0.01	<MDL	0.01	<MDL	2
Prometryne	0.03	<MDL	0.03	<MDL	1
Simazine	0.01	<MDL	0.01	<MDL	10
Terbufos	0.01	<MDL	0.01	<MDL	1
Triallate	0.01	<MDL	0.01	<MDL	230
Trifluralin	0.02	<MDL	0.02	<MDL	45

2,4-dichlorophenoxyacetic acid	0.19	<MDL	0.19	<MDL	100
Bromoxynil	0.33	<MDL	0.33	<MDL	5
Dicamba	0.2	<MDL	0.2	<MDL	120
Diclofop-methyl	0.4	<MDL	0.4	<MDL	9
MCPA (mg/L)	0.00012	<MDL	0.00012	<MDL	0.1
Picloram	1	<MDL	1	<MDL	190
2,4-dichlorophenol	0.15	<MDL	0.15	<MDL	900
2,4,6-trichlorophenol	0.25	<MDL	0.25	<MDL	5
2,3,4,6-tetrachlorophenol	0.2	<MDL	0.2	<MDL	100
Pentachlorophenol	0.15	<MDL	0.15	<MDL	60

3.3.4 Trihalomethanes

One distribution sample is taken every three months from a point in the distribution system and tested for Trihalomethanes (THMs). The Ontario Drinking Water Quality Standard (ODWQS) have set a Maximum Allowable Concentration (MAC) of 100µg/L for this parameter and it's expressed as a running annual average. In 2024, the average THM was found to be 5.6µg/L, which is well below the MAC. Refer to **Table 9** for the summary of Trihalomethane results.

3.3.5 Nitrate & Nitrite

One treated water sample is taken every three months and tested for nitrate and nitrite. The Ontario Drinking Water Quality Standard (ODWQS) have set a Maximum Allowable Concentration (MAC) of 1 mg/L for nitrites and 10 mg/L for nitrates. The results were found to be within compliance. Refer to **Table 9.**

Table 9 – Nitrate, Nitrite and THM Results at Wingham Drinking Water System

Treated Drinking Water - Nitrites and Nitrates POE Well 3									O.Reg 169				
Date		**Jan 2-24**		**Apr 2-24**		**July 9-24**		**Oct 15-24**	**Min**	**Max**	**Avg**	**MAC**	**1/2 MAC**
NO2		0.003	<	0.003	<	0.03	<	0.03	**0.003**	**0.030**	**0.017**	**1**	**0.5**
NO3		0.01		0.01		0.012		0.01	**0.010**	**0.012**	**0.011**	**10**	**5**
NO2+NO3		0.01		0.01		0.012		0.01	**0.010**	**0.012**	**0.011**	**10**	**5**

Treated Drinking Water - Nitrites and Nitrates POE Well 4									O.Reg 169				
Date		**Jan 2-24**		**Apr 2-24**		**July 9-24**		**Oct 15-24**	**Min**	**Max**	**Avg**	**MAC**	**1/2 MAC**
NO2		0.003	<	0.003	<	0.004	<	0.03	**0.003**	**0.030**	**0.010**	**1**	**0.5**
NO3		0.006		0.006		0.006	<	0.006	**0.006**	**0.006**	**0.006**	**10**	**5**
NO2+NO3		0.006		0.006		0.006	<	0.006	**0.006**	**0.006**	**0.006**	**10**	**5**

Distribution Drinking Water - Trihalomethanes													
Date	**Jan 2-24**		**Apr 2-24**		**July 9-24**		**Oct 15-24**		**Min**	**Max**	**Average**	**MAC**	**1.2 MAC**
THMs (total)	5.7		6.9		13		5.6		**5.6**	**13.0**	**7.8**	**100**	**50**
Bromodichloromethane	1.4		1.5		2.7		1.4		**1.4**	**2.7**	**1.8**		
Bromoform	0.34	<	0.34	<	0.34	<	0.34		**0.340**	**0.340**	**0.340**		
Chloroform	3.7		4.8		9.3		3.7		**3.7**	**9.3**	**5.4**		
Dibromochloromethane	0.56		0.61		0.91		0.50		**0.50**	**0.91**	**0.65**		

[a] – Samples collected on January 2nd, April 2nd, July 9th and Oct 15th 2024 respectively.

3.3.6 Sodium

One water sample is collected every 60 months and tested for Sodium. O. Reg 170/03 has set a Maximum Acceptable concentration (MAC) of 20 mg/L for Sodium which requires the Medical Office of Health be notified if the concentration exceeds the MAC. These samples were collected on January 10, 2023 and were found to be 13.1 mg/L at Well 3 and 15.1 mg/L at Well 4.

3.3.7 Fluoride

One water sample is collected at least once in every 60 months and tested for Fluoride. The Ontario Drinking Water Quality Standards (ODWQS) have set a MAC of 1.5 mg/L. These samples were collected on January 10, 2023 and were found to be 0.96 mg/L at Well 3 and 0.98 mg/L at Well 4, which is within compliance.

TW Sodium/ Fluoride			
Date	**Location**	**Fluoride**	**Sodium**
Jan 10-23	**Well 3 POE**	0.96	13.1
	Well 4 POE	0.98	15.1
Treated MAC		1.5	**20**
	Min	0.96	13.1
	Max	0.98	15.1
	Average	1.0	14.1

Treated Water Sodium and Fluoride is required to be collected and analyzed in 2028

4.0 WATER AND CHEMCIAL USAGE

4.1 Chemical Usage

Refer to **Table 10.** From January 1, 2024 to December 31, 2024, 867 kg of sodium hypochlorite was used to ensure proper disinfection in the distribution system with an average dosage of 2.73 mg/L between the two wells.

Table 10 – Chemical Usage at Wingham Drinking Water System

Township of North Huron - Wingham Well Supply - 2024 Summary								
Site	Well #3				Well #4			
Month	Chlorine used (Kg)	Cl Dosage	Silicate (L)	Silicate Dosage	Chlorine used (Kg)	Cl Dosage	Silicate (L)	Silicate Dosage
January	43.8	2.46	266.9	6.04	22.2	2.47	127.9	5.39
February	43.6	2.21	264.0	5.22	19.9	2.47	110.5	5.17
March	42.7	2.00	254.5	5.11	21.9	2.47	117.1	5.10
April	41.6	3.04	221.6	6.71	22.6	2.54	119.6	5.21
May	43.4	2.41	251.8	5.93	37.0	2.54	198.4	5.30
June	48.9	2.67	271.3	6.81	26.8	2.62	137.9	5.32
July	50.6	2.99	246.2	6.74	28.2	2.69	150.5	5.44
August	54.4	2.86	274.7	7.55	24.6	2.78	128.1	5.43
September	53.2	4.12	279.1	8.28	35.4	2.93	179.1	5.67
October	55.1	3.34	265.7	7.35	21.3	2.74	108.1	5.55
November	44.0	2.89	245.5	6.55	20.3	2.64	106.6	5.40
December	44.3	3.13	253.5	8.73	21.2	2.53	111.8	5.06
Total	565.5		3094.9		301.4		1595.5	
Min	41.6	2.00	221.6	5.11	19.9	2.47	106.6	5.06
Max	55.1	4.12	279.1	8.73	37.0	2.93	198.4	5.67
Avg	47.1	2.85	257.9	6.75	25.1	2.62	133.0	5.34

[a] – Results collected from January 1, 2024 – December 31, 2024

4.2 Annual Flows

A summary of the water supplied to the distribution system in 2024 is provided in **Table 11.** This Table provides a breakdown of the flow provided to the distribution system.
Flow meters were calibrated in 2024 by Advanced Meter Service and were found to be acceptable. The Flow meters will be calibrated again 2025.

Table 11. Water Taking Summary

Permit to Take Water 1450-B38HKS Compliance Report - 2024					
3.2 -Maximum Amount of Taking Permitted					
		Max/Day on Permit		Peak Flow	%of Limit	
Well #3 (in m3)		6537	m3	1249	19.1	%
Well #4 (in m3)		5270	m3	1090	20.7	%
3.2 - Average Annual Amount of Taking Permitted					
Well #3 (in m3)		6537	m3	645	9.9	%
Well #4 (in m3)		5270	m3	315	6.0	%
Municipal Drinking Water License 090-102 Issue 5 - Capacity Report					
		Total Peak Flow				
		Maximum		Actual	%of Cap	
Capacity (m3/d)		11808	m3	1768	15.0	%
Total Average Flow					
Capacity (m3/d)		4309774	m3	350554	8.1	%
		11808	m3	960	8.1	%

5.0 IMPROVEMENTS TO SYSTEM AND ROUTINE & PREVENTATIVE MAINTENANCE

The following summarizes water system improvements and routine and preventative maintenance for the Wingham Drinking Water System:

- Routine & corrective maintenance as per computerized maintenance system
  - Alarm testing
  - Generator Test runs
  - Analyzer calibrations & cleanings
- Well 4 Generator new transformer and thermostat on louvres
- Hydrant flushing & Valve Operation

6.0 MINISTRY OF THE ENVIRONMENT INSPECTIONS AND REGULATORY ISSUES

The Ministry of Environment inspection was completed by Shayne Finlay from Sept 19 2024- November 15, 2024.

There were no non-compliances noted and the final inspection rating was 100%

7.0 Halo-acetic Acids (HAA5)

In 2024 Samples for HAA5's were collected at the beginning of every quarter, Maximum acceptable concentration for HAA5's is 80 ug/L all samples were compliant to the limit in 2024

Table 12 Total Halo-acetic Acids

HAA5	Ug/L									
Date	Jan 2-24		Apr 2-24		July 9-24		Oct 15-24			
	Well 3 DW	Well 4	Well 3 DW	Well 4	Well 3 DW	Well 4	Well 3 DW	Well 4	Average Well 3	Average well 4
Total HAA5	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Bromoacetic Acid	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Chloroacetic Acid	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Dichloroacetic Acid	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Dibromoacetic Acid	2	2	2	2	2	2	2	2	2	2
Trichloroacetic Acid	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Min	2	2	2	2	2	2	2	2	2	2
Max	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Average	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8

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