Manorview Drinking Water System

Waterworks # 260001864
System Category – Small Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2023

Issued: February 21, 2024

Revision: 0

Operating Authorities:

This report has been prepared to satisfy the annual reporting requirements in O. Reg. 170/03 Section 11 and Schedule 22

Table of Contents

Annual Water Report 1
Report Availability 1
Compliance Report Card 1
System Process Description 1
Raw Source 1
Treatment 1
Treatment Chemicals used during the reporting year 2
Summary of Non-Compliance 2
Adverse Water Quality Incidents 2
Non-Compliance 2
Non-Compliance Identified in a Ministry Inspection 2
Flows 2
Raw Water Flows 2
Well #1 Total Monthly Flows 3
Well #1 Monthly Rated Flows 3
Well #2 Total Monthly Flows 4
Well #2 Monthly Rated Flows 4
Treated Water Flows 5
Treated Water Monthly Flows – Rated Capacity 5
Annual Total Treated Water Flow Comparison 5
Regulatory Sample Results Summary 6
Microbiological Testing 6
Operational Testing 6
Inorganic Parameters 6
Schedule 15 Sampling 7
Organic Parameters 8
Additional Legislated Samples 9
Major Maintenance Summary 9
WTRS Submission Confirmation ..... A

Report Availability

This system does not serve more than 10,000 residences. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office and on the City's website at www.kawarthalakes.ca. Notification that reports are available free of charge will be made on the City of Kawartha Lakes website. The City of Kawartha Lakes Public Works Administration Office is located at 322 Kent Street West in Lindsay, Ontario.

Compliance Report Card

Drinking Water System Number: 260001864
Drinking Water System Name: Manorview DWS
Drinking Water System Owner: City of Kawartha Lakes
Drinking Water System Category: Small Municipal Residential
Period Being Reported: January 1, 2023 - December 31, 2023

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	May 31, 2023	Unannounced - Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	0		
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The supply for the DWS comes from two (2) groundwater wells that are designated as GUDI (Groundwater Under the Direct Influence of Surface Water).

Treatment

The treatment system consists of the following:

- a sodium hypochlorite disinfection system
- cartridge filtration
- two (2) UV reactors
- underground clearwell
- hydropneumatic tank

- high lift pumping system
- on-line monitoring of chlorine
- stand-by diesel generator on-site

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi Water Technologies

Summary of Non-Compliance

Adverse Water Quality Incidents

There were no adverse water quality incidents reported during the reporting period.

Non-Compliance

There were no non-compliance issues reported during the reporting period.

Non-Compliance Identified in a Ministry Inspection

There were no non-compliances identified in a Ministry Inspection during this period.

Flows

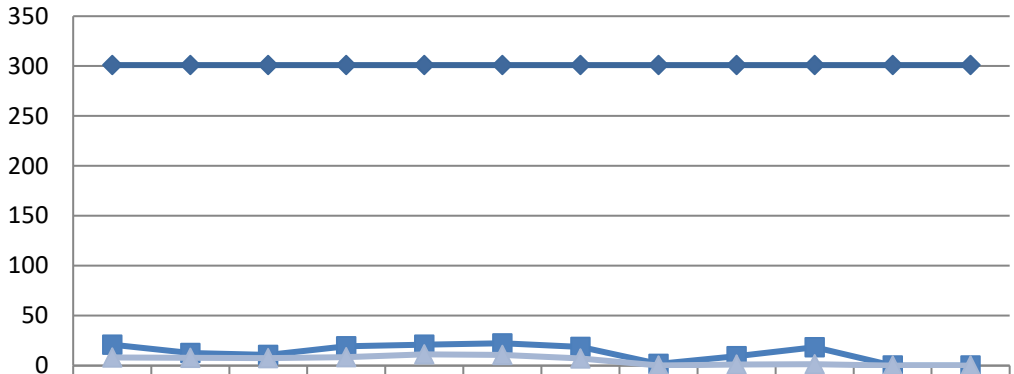
The Manorview Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2023 Raw Flow Data was submitted to the Ministry electronically under permit #1163-AYRJ36. A copy of the confirmation is included in Appendix A. The Permit to Take Water compliance criteria is in litres per minute (L/min) but for the purposes of this report the flow rate is reported in litres per second (L/sec) based on industry standard for flow monitoring recording.

Total Monthly Flows (m³/d)

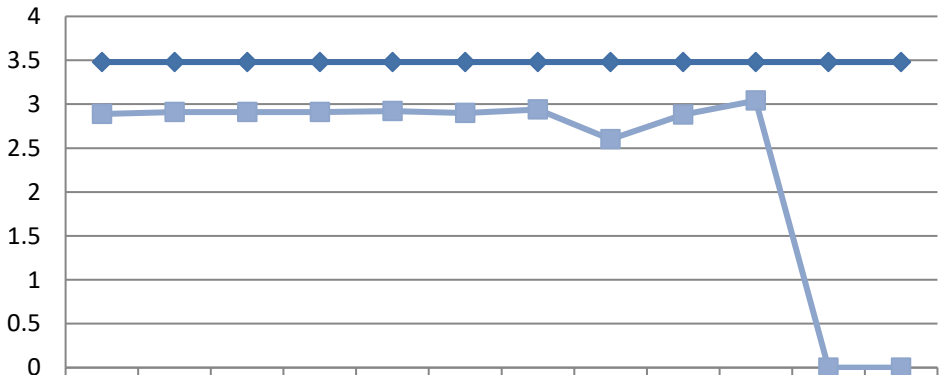
Max Allowable PTTW – Well #1



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	301	301	301	301	301	301	301	301	301	301	301	301
Max Flow (m³/d)	21	13	11	19	21	22	19	2	9	18	0	0
Avg (m³/d)	8	8	7	8	11	11	7	0	1	1	0	0

Monthly Rated Flows (L/s)

Max Allowable Rate – PTTW – Well #1

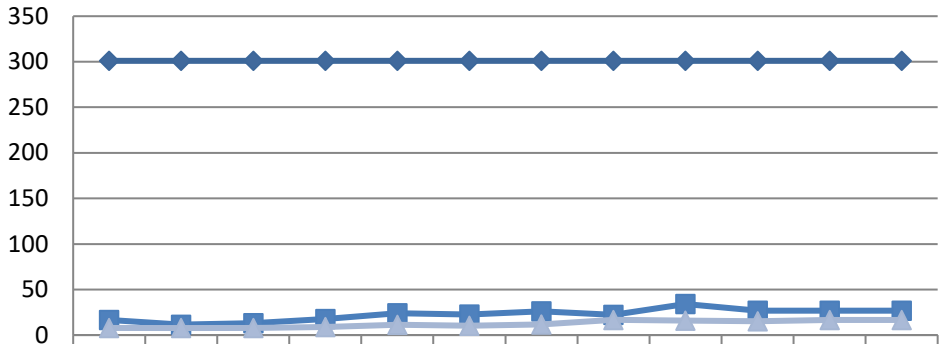


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48
Max Rate (L/s)	2.89	2.91	2.91	2.91	2.92	2.90	2.94	2.60	2.88	3.04	0.00	0.00

Note: On October 6, 2023, Well #1 was moved from production to stand-by status due to higher levels of turbidity present in the well.

Total Monthly Flows (m³/d)

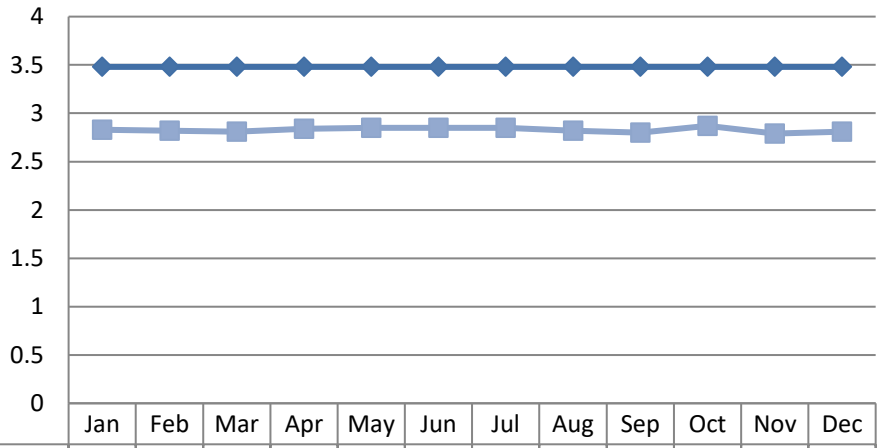
Max Allowable PTTW – Well #2



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	301	301	301	301	301	301	301	301	301	301	301	301
Max Flow (m³/d)	17	11	13	17	24	23	26	22	34	27	27	27
Avg (m³/d)	8	8	8	9	11	10	12	17	16	15	17	16

Monthly Rated Flows (L/s)

Max Allowable Rate – PTTW – Well #2



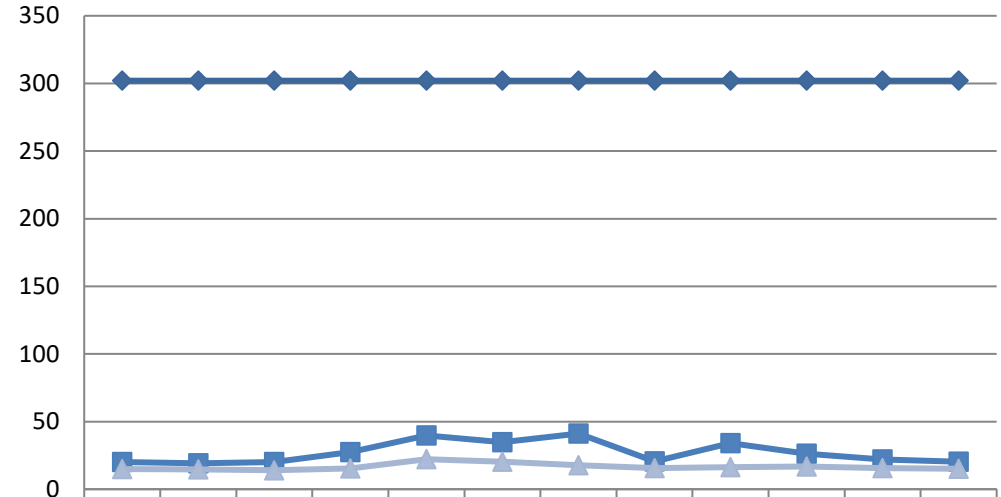
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48
Max Rate (L/s)	2.83	2.82	2.81	2.84	2.85	2.85	2.85	2.82	2.80	2.87	2.79	2.81

Treated Water Flows

The Treated Water flows are regulated under the Municipal Drinking Water Licence #141-118.

Monthly Rated Flows

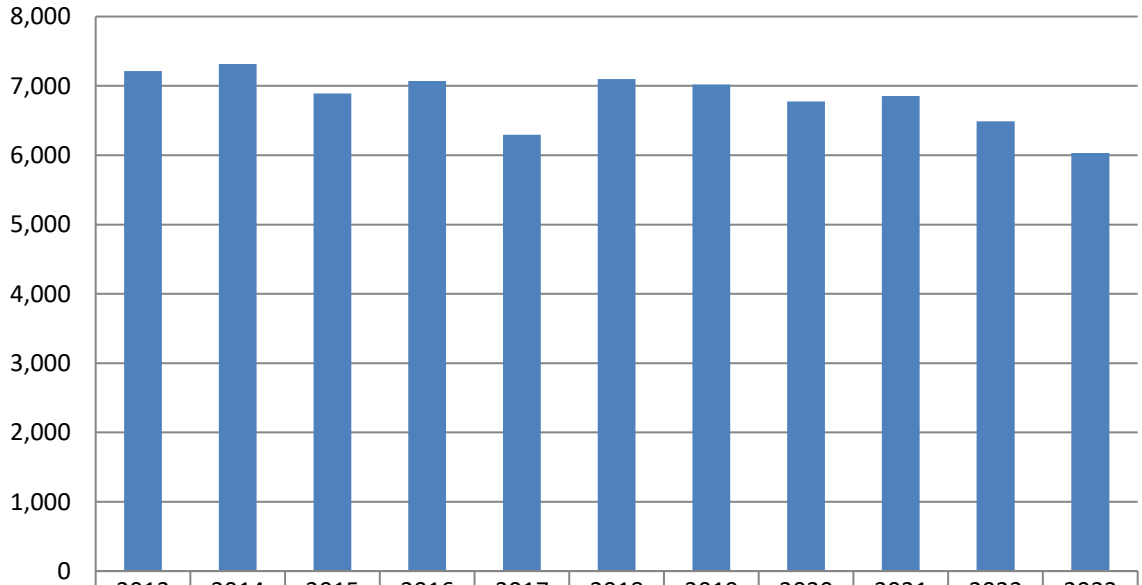
Rated Capacity − MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m^3/d)	302	302	302	302	302	302	302	302	302	302	302	302
Max Daily Flow (m^3/d)	20	19	20	27	40	35	41	21	34	26	22	20
Avg (m^3/d)	15	15	14	15	22	20	18	16	16	17	16	15

Annual Total Flow Comparison

Total Annual m^3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
TW Total (m^3)	7,216	7,317	6,893	7,069	6,293	7,101	7,019	6,773	6,855	6,488	6,032

Regulatory Sample Results Summary

Microbiological Testing

(completed under Schedule 10, 11 or 12 of Ontario Regulation 170/03, during the reporting period).

	No. of Samples Collected	Range of E. Coli Results	Range of E. Coli Results	Range of Total Coliform Results	Range of Total Coliform Results	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max	Min	Max
Raw Well 1	28	0	0	0	5		
Raw Well 2	27	0	0	0	3		
Treated	0						
Distribution	53	0	0	0	0	0	1

Operational Testing

(completed under Schedule 7, 8 or 9 of Ontario Regulation 170/03, during the reporting period).

Parameter	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Well 1 (NTU)	11	0.11	14.4
Turbidity Well 2 (NTU)	12	0.25	0.91
Turbidity – Filter (NTU)	8760	0.01	2
Chlorine	8760	0.64	2.35
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measure if it is **not** milligrams per litre.
Note: For continuous monitors 8760 is used as the number of samples**.** Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O. Reg. 170/03, did not indicate a true exceedance. A true exceedance would be documented within this report.

Inorganic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. Sodium, Fluoride and metals are required to be tested every five years. Nitrate and Nitrite are tested quarterly as required under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = Method Detection Limit

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Results	MAC	Exceedance MAC	Exceedance ½ MAC
Antimony: Sb (ug/L) - TW	2020/01/06	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	2020/01/06	0.4	10.0	No	No
Barium: Ba (ug/L) - TW	2020/01/06	67.7	1000.0	No	No
Boron: B (ug/L) - TW	2020/01/06	6.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020/01/06	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2020/01/06	0.51	50.0	No	No
Mercury: Hg (ug/L) - TW	2020/01/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020/01/06	0.18	50.0	No	No
Uranium: U (ug/L) - TW	2020/01/06	0.528	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2020/01/06	0.08	1.5	No	No
Nitrite (mg/L) - TW	2023/01/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2023/04/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2023/07/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2023/10/03	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2023/01/03	0.114	10.0	No	No
Nitrate (mg/L) - TW	2023/04/03	0.097	10.0	No	No
Nitrate (mg/L) - TW	2023/07/04	0.238	10.0	No	No
Nitrate (mg/L) - TW	2023/10/03	0.409	10.0	No	No
Sodium: Na (mg/L) - TW	2020/01/06	4.64	20*	No	No

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

Schedule 15 Sampling

The Schedule 15 Sampling is required under O. Reg. 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (ug/L)	Number of Exceedances
Alkalinity (mg/L)	1	2	195	216	N/A	N/A
pH	1	2	7.48	7.80	N/A	N/A
Lead (ug/L)	1	2	0.10	0.16	10	No

Organic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Alachlor (ug/L) - TW	2020/01/06	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2020/01/06	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2020/01/06	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2020/01/06	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2020/01/06	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2020/01/06	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2020/01/06	<MDL 0.01	90.00	No	No
Carbofuran (ug/L) - TW	2020/01/06	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2020/01/06	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2020/01/06	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2020/01/06	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2020/01/06	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2020/01/06	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2020/01/06	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2020/01/06	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2020/01/06	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2020/01/06	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2020/01/06	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2020/01/06	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2020/01/06	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2020/01/06	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic	2020/01/06	<MDL 0.12	100.0	No	No

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Acid (MCPA)					
Metolachlor (ug/L) - TW	2020/01/06	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2020/01/06	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2020/01/06	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2020/01/06	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2020/01/06	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2020/01/06	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2020/01/06	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2020/01/06	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2020/01/06	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2020/01/06	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2020/01/06	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2020/01/06	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2020/01/06	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2020/01/06	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2023	7.98	100	No	No
HAA Total (ug/L) Annual Average - DW	2023	5.30	80	No	No

MAC = Maximum Allowable Concentration as per O. Reg. 169/03
MDL = Method Detection Limit

Additional Legislated Samples

There were no additional legislated samples required to report during this reporting period.

Major Maintenance Summary incurred to install, repair or replace required equipment

WO #	Description
3291909	Roof, Replace
3340862	Flow meter in alarm, Not reading flow
3385508	Pump Cent HLP 1, Leaking at inlet, Repair

WO #	Description
3387705	High Lift 1 Fault
3483995	Air relief valve passing water, Repair
3523605	Check valve, Well Pump 1
3575238	UV 1 controller fan failing, Corrective
3623721	Driveway, Repair
3666586	Well 1, Air relief valve

Appendix A

WTRS Submission Confirmation