A G E N D A

"Greenwood Source Water Protection Advisory Committee Meeting"

Greenwood Village Office, Greenwood N.S.

March 21, 2019
10:00 a.m.

1. Meeting to Order

2. Roll Call

3. Amendments to the Agenda

4. Approval of the agenda

5. Business Arising from previous minutes
   - Conservation By-law - Status
   - Public Education – Information Packets

6. Approval of Minutes

7. Disclosure of Conflict of Interest

8. Business
   - Potential new well - update
   - Management Plan Evaluation
   - Greenwood Source Water Protection Committee Policy Review

9. Other Business
   - Municipal Land-Use Planning updates
   - Landowner concerns

10. Correspondence

11. Date of Next Meeting

12. Public Comments

13. Adjournment

GREENWOOD SOURCE WATER PROTECTION
ADVISORY COMMITTEE
MINUTES OF September 26, 2018

1. Meeting to Order:
Chairperson Paul Spicer called the meeting to order at 10:00 a.m.

2. Roll Call:
Attending:
Councilor Paul Spicer, Chair
Holden Armstrong, Citizen Representative
Commissioner Bob Baker, Village of Greenwood
Mark Fredericks, Planner, Municipality of Kings County
Lisa Langille, Compliance Officer, Municipality of Kings County
Lisa Amon, Recording Secretary, Municipality of Kings
Dawn MacNeill, Nova Scotia Environment
Kim Kelsey, Property Officer 14 Wing Greenwood

Regrets:
Scott Quinn, Director EPW, Lands and Parks

3. Amendments to the Agenda:
Update on the Public Meeting was added to the agenda.

4. Approval of the Agenda:

The agenda for the September 26, 2018 meeting of the Greenwood Source Water Advisory Committee was circulated.

Commissioner Baker moved for approval of the agenda; seconded by Mr. Armstrong.

5. Business Arising from the Minutes:
Water Conservation By-law – Background; as an item for our approval to operate, we are required to have a water conservation plan in place and in addition to this, we had a study done in 2017 by Terry Hennigar to determine parameters for conservation with our well levels. We currently have a water conservation plan in place but all elements of it are voluntary. To add an element of enforcement, it was determined that a bylaw would be a good tool.

Lisa L reviewed highlights of the Draft Conservation By-Law and a discussion was held. The committee held a discussion on timelines on Part 4: Implementation of Water Use Restrictions and this will be discussed further during public consultation.

Discussion was also held on Part 6: Watering Permit. The watering permit name is currently in the landscaping company's name the watering permit should be issued to the property.

Lisa L has made some small changes to the Conservation By-law and will send them out to the committee. She would like the committee to review the changes and get back to her with any comments or changes. A Public meeting will be held in November some time.

It was asked if the Conservation By-law will apply to the base consumers. DND has asked base consumers not to wash their cars or water their lawns in the summer.

Lisa L mentioned as a bulk water customer DND is notified of Public Meetings.

Public Education - The Septic System Guide sample was reviewed. This type of guide could distributed and used to educate the public. Dawn will update and edit the contact information. The information could be sent out as an annual letter with a map on the back.

Public Meeting Update - Residents at the public meeting for the new well had no strong opposition on the location of the monitor well. The presentation Terry Hennigar made went well. There were around 13 people who attended. The main concern brought up was the perc plume from the drycleaner. There were no negative comments.

Kim questioned if the three monitoring wells for the proposed well would be on Municipal Land? Lisa advised they are close to the road. It was also questioned if DOT are stakeholders.

Dawn questioned if Kim could provide the committee with a contact person from the DND to be a representative from the base for customer representation. Kim advised the property office would be the contact.

6. <u>Approval of the Minutes:</u>

The minutes of the March 29, 2018 meeting of the Greenwood Source Water Advisory Committee were circulated with the agenda and reviewed.

Commissioner Baker moved for approval of the Greenwood Source Water Protection Advisory Committee minutes of March 29, 2019; seconded by Mr. Fredericks.

7. <u>Disclosure of Conflict of Interest:</u>

None

8. <u>Business:</u>

Management Plan Evaluation – Lisa L reviewed her report updates from January to September 2018. The pH in monitoring Well #1 and #2 are a little high. Lisa reviewed the monitoring well depths vs production well depths.

Agricultural Best Management Practices – Dawn pointed out the setbacks for wellheads are in the current Agricultural Best Management Practices.

On the motion of Mr. Baker and Mr. Fredericks the Greenwood Source Water Protection Advisory Committee accepts the Agricultural Best Management Practices to be used in the updated Greenwood Source Water Protection plan. Motion Carried.

Citizen Representation – the citizen member representation will be expiring soon and add will be placed in the local papers. Mr. Armstrong stated he is interested in reoffering.

9. Other Business:

- *The committee will meet at the Greenwood Water Tower on October 23 at 1:00 pm for a tour of the monitoring well locations, the water tower and the Greenwood Treatment Plant.*

There was a brief discussion on wellfields. Kim questioned if Clements Park is on DND land. Lisa L explained the discussions on the new well and source water-protection area are in the planning stages and a ways off.

Kim stated she thought Zone D of the current wellfield overlapped with DND land. Mark explained no, the well is south.

- Mark will forward Kim the 2nd Planning Strategic Map that will outline the area in question.

Municipal Land-Use Planning updates –
Mark stated there is nothing new to report on the Municipal Land-Use Planning updates. There have been names consistency changing in the wording.

- *Dawn suggested that Mark send the changes to the committee for review before the public consultation in late spring.*

Landowner concerns -

- *A brief discussion was held regarding a property on Carol St. having brown water, staff will follow up on this to see what the issue is.*

10. Correspondence:
None.

11. Date of Next Meeting:
It was agreed the next meeting of the Committee will take place on Thursday, March 7, 2019 or storm date of March 21, 2019 at 10 a.m.

12. Public Comments:
None.

13. <u>Adjournment:</u>

With no further business to discuss, the meeting was adjourned at 11:30am as moved by Commissioner Baker and seconded by Mr. Armstrong.

Greenwood Source Water Protection Monitoring Plan Evaluation

2018 Annual Report

1. By-Laws

Complete Jan. 12/12.

2. Best Management Practices

Adopted as a resource March 24, 2016. A review of the *"A Guide to Agricultural Best Management Practices within Municipal Drinking Water Supply Areas in Nova Scotia"* was conducted at the September 2018 meeting.

3. Greenwood Sewage Treatment Plant Monitoring Wells Program

The Groundwater monitoring wells were tested weekly as per the "Groundwater Monitoring Program for the Greenwood Sewage Treatment Facility" developed for the Municipality by CBCL Ltd.

The weekly parameters are attached (Jan 2017-Dec 2018), the graph results are as follows:

Water level – Following normal seasonal trends. Well 3B was dry for most of the year.

Temperature – Following normal seasonal trends but does reflect slightly higher summer temperatures this year.

pH - We are seeing some higher pH values in Well #1, this is upstream of the plant and it generally more apparent following a heavy rain. This area has been cleared of trees in the last two years and we feel this may be affecting the pH and conductivity due to the organics break down which affects the well values when it rains. We will continue to monitor this. The remainder of the wells are following normal seasonal trends although we are seeing a few spikes in well #2 following heavy precipitation events.

DO – We saw some slightly higher than normal DO's, in speaking with our Laboratory Technician, she indicated that although they seemed higher anything over 10 is considered supersaturated and due to testing capabilities, between 10-13 there is very little actual difference, if any. DO is also very dependant on temperature fluctuations ↑ temperature = ↓ DO and ↓ temperature = ↑ DO, so if you compare the DO graph with the temperature graph, there is a relationship between the peaks and valleys. We will continue to monitor trends.

Conductivity – We are seeing some lower conductivity values in Well #1, this is upstream of the plant and it generally more apparent following a heavy rain. This area has been cleared of trees in the last two years and we feel this may be affecting the pH and conductivity due to the organics break down which affects the well values when it rains. We will continue to monitor this. The remainder of the wells are following normal seasonal trends, although we are seeing a few spikes in well #2 following heavy precipitation events.

The quarterly testing has indicated no unusual trends. The only exceedences of the Canadian Drinking Water Guidelines was total coliform, with relatively low counts found in all wells though out the year. This is not unusual for wells that are shallow and opened up so frequently. They were all absent for E. coli so no further investigation was required.

4. Raw Water pH Monitoring

We are observing slightly higher raw pH values in the production wells (averaging 0.5) starting approximately in March. There are no other notable parameter changes amongst our extensive testing regime. Due to this, we feel it could be simply a matter of instrumentation differences as the annual factory calibration was conducted by Hach in March 2018. We will continue to monitor.

5. Greenwood Production Well Weekly/Annual Sampling:

All weekly microbial testing came back absent for coliform and E.coli since January 2018.

Guidelines for Monitoring Public Drinking Water Supplies – completed in June and all within compliance.

Guidelines for Canadian Drinking Water Quality testing, conducted every 5 years, was also completed in July 2017, all results were within the guidelines.

6. Contingency Planning:

Up to date.

7. Education and Stewardship:

For discussion.

Appendix A

Greenwood Sewage Treatment Plant Groundwater Monitoring Wells – Quarterly

Greenwood Sewage Treatment Plant Monitoring Well

Well #1

Parameter	Unit	G/S (mg/L)	RDL	Baseline	3/27/2017	7/4/2017	10/2/2017	1/9/2018	3/26/2018	6/26/2018	9/25/2018	12/21/2018
Anion Sum	me/L			1.34	0.29	0.58	0.95	0.57	0.41	0.61	0.75	0.28
Cation Sum	mg/L			1.07	0.35	0.57	0.78	0.51	0.4	0.57	0.6	0.28
Bicarb Alkalinity (CaCO3)	mg/L		5	46	10	22	36	23	14	22	29	11
Carb Alkalinity	mg/L		10	<10	<10	<10	<10	<10	<10	<10	<10	M10
Hydroxide	mg/L		5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calculated TDS	mg/L	AO </= 500	1	65	16	31	47	29	21	31	37	15
Hardness	mg/L			42.6	12.1	20.7	29.7	17.9	14.5	21.2	22.3	8.8
Ion Balance	%			11.4	9.6	1.2	9.9	6.4	1	3	10.7	1.3
Langelier Index (20C)	NA			-0.96	-2.75	-2.19	-1.72	-1.94	-2.66	-2.36	-1.73	-2.81
Langelier Index (4C)	NA			-1.28	-3.07	-2.51	-2.04	-2.26	-2.98	-2.68	-2.05	-3.13
Saturation pH (20C)	NA			8.76	9.94	9.39	9.04	9.43	9.72	9.38	9.25	10
Saturation pH (4C)	NA			9.08	10.3	9.71	9.36	9.75	10	9.7	9.57	10.4
pH	NA	7.0-10.5		7.8	7.19	7.2	7.32	7.49	7.06	7.02	7.52	7.22
Reactive Silica as SiO2	mg/L		0.5	12.5	8.8	8.8	10.3	9.7	7.7	9.6	10.3	7.5
Chloride	mg/L	AO </= 250	1	11	3	3	3	3	4	4	3	2
Fluoride	mg/L	1.5	0.1	0.1	0.14	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	mg/L	AO </= 500	2	5	<2	2	4	<2	<2	2	3	<2
Alkalinity	mg/L		5	46	10	22	36	23	14	22	29	11
True Colour	TCU	AO </= 15	5	<5	8	<5	9	11	7	<5	<5	<5
Turbidity	NTU		0.1	7200	3.9	86.1	2.3	10.4	2.8	3.2	0.6	1.3
Electrical Conductivity	umho/cm		1	135	38	63	98	60	48	64	79	34
Nitrate+Nitrite as N	mg/L		0.05	0.11	0.07	0.25	0.81	0.41	0.2	0.17	0.3	0.12
Nitrate as N	mg/L	10	0.05	0.11	0.07	0.25	0.81	0.41	0.2	0.17	0.3	0.12
Nitrite as N	mg/L	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	mg/L		0.05	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	0.03
Total Organic Carbon	mg/L		0.5	3	1.1	1.6	1.7	1.3	1.2	1.4	2.5	1.4
Dissolved Organic Carbon	mg/L		0.5	0.7	0.9	1.5	1.1	1.3	1	1.4	2.4	1
Ortho-Phosphate as P	mg/L		0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.13	<0.01	0.02	0.02
Biochemical Oxygen Demand	mg/L		2	<2	<2	3	<2	<2	<2	3	<2	2
Total Suspended Solids	mg/L			8300								2
Total Kjeldahl Nitrogen as N	mg/L		0.4	2.4	<0.4	0.9	0.5	0.5	<0.4	<0.4	0.17	<0.4
Total Coliforms	MPN/100mL	0	1	<2	<1	<1	<1	<1	<1	<1	<1	4
Escherichia coli	MPN/100mL	0	1	<2	<1	<1	<1	<1	<1	<1	<1	<1
Fecal	CFU/100mL	0	2									
Aluminum	ug/L	OG < 100	10	<5	<5	<5	<5	<5	<5	<5	<5	<5
Antimony	ug/L	6	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	ug/L	10	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Barium	ug/L	1000	5	7	<5	<5	<5	<5	<5	<5	6	6
Beryllium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bismuth	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Boron	ug/L	5000	5	8	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	ug/L	5	0.3	<0.017	0.027	0.304	0.024	0.209	0.049	<0.09	<0.09	<0.09
Chromium	ug/L	50	2	<1	<1	<1	1	<1	<1	<1	1	<1
Cobalt	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	ug/L	AO </= 1000	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron	ug/L	AO </= 300	50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Lead	ug/L	10	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese	ug/L	AO </= 50	2	3	<2	<2	<2	<2	<2	<2	<2	<2
Mercury	ug/L	1										
Molybdenum	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Nickel	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Phosphorus	mg/L		0.03	<0.02	<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Selenium	ug/L	10	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	ug/L		0.5	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Strontium	ug/L		5	44	11	18	24	15	14	25	26	9
Thallium	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Titanium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Uranium	ug/L	20	0.1	0.9	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Vanadium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc	ug/L	AO </= 500	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sodium	mg/L		0.1	4.1	2.2	3.2	3.7	3	2.2	3	3.1	2
Potassium	mg/L		0.1	1.3	0.5	0.7	0.8	0.7	0.5	0.7	0.7	0.5
Calcium	mg/L		0.1	14.1	3.7	6.3	9.1	5.5	4.5	6.5	6.8	2.7
Magnesium	mg/L		0.1	1.8	0.7	1.2	1.7	1	0.8	1.2	1.3	0.5
Benzene	ug/L		1									
1,4-Dichlorobenzene	ug/L		1									
Methylene Chloride	ug/L		2									
Toluene	ug/L		2									
Vinyl Chloride	ug/L		0.6									
Chemical Oxygen Demand	mg/L		3									
Phenolics	mg/L		0.001									

Greenwood Sewage Treatment Plant Monitoring Well

Well #2

Parameter	Unit	G/S (mg/L)	RDL	Baseline	3/27/2017	7/4/2017	10/2/2017	1/9/2018	3/26/2018	6/26/2018	9/25/2018	12/21/2018
Anion Sum	me/L			3.67	0.59	0.71	0.85	0.73	0.61	0.57	0.74	0.57
Cation Sum	mg/L			3.21	0.62	0.63	0.68	0.64	0.59	0.57	0.58	0.45
Bicarb Alkalinity (CaCO3)	mg/L		5	52	16	22	26	20	15	15	23	16
Carb Alkalinity	mg/L		10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hydroxide	mg/L		5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calculated TDS	mg/L	AO </= 500	1	194	33	37	43	39	33	31	37	29
Hardness	mg/L			77.1	20.9	19.7	22.1	20.9	19.5	17.8	19	14.6
Ion Balance	%			6.6	2.2	6.5	10.7	6.7	1.5	0.1	12.1	11
Langelier Index (20C)	NA			-0.61	-2.85	-3.03	-2.57	-2.78	-3.13	-3.1	-2.66	-2.77
Langelier Index (4C)	NA			-0.93	-3.17	-3.35	-2.89	-3.1	-3.45	-3.42	-2.98	-3.09
Saturation pH (20C)	NA			8.51	9.56	9.47	9.34	9.47	9.62	9.66	9.46	9.71
Saturation pH (4C)	NA			8.83	9.55	9.79	9.66	9.79	9.94	9.98	9.78	10
pH	NA	7.0-10.5		7.9	6.71	6.44	6.77	6.69	6.49	6.56	6.8	6.94
Reactive Silica as SiO2	mg/L		0.5	12.6	11.6	10.7	10.7	11.1	9.9	9.8	10.9	10
Chloride	mg/L	AO </= 250	1	89	7	7	8	7	8	7	7	5
Fluoride	mg/L	1.5	0.1	<0.1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	mg/L	AO </= 500	2	5	3	3	4	4	3	3	3	4
Alkalinity	mg/L		5	52	16	22	26	20	15	15	23	16
True Colour	TCU	AO </= 15	5	<5	5	5	15	<5	7	6	<5	<5
Turbidity	NTU		0.1	3000	4	74.6	3	3.1	2.9	3.1	1.8	1.1
Electrical Conductivity	umho/cm		1	405	73	76	85	83	73	72	88	76
Nitrate+Nitrite as N	mg/L		0.05	0.16	0.21	0.16	0.28	0.74	0.29	0.17	0.27	0.3
Nitrate as N	mg/L	10	0.05	0.16	0.21	0.16	0.28	0.74	0.29	0.17	0.27	0.3
Nitrite as N	mg/L	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	mg/L		0.05	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.07	<0.03
Total Organic Carbon	mg/L		0.5	2.5	1.2	1.5	1.1	1.2	1.4	1.4	2.1	1
Dissolved Organic Carbon	mg/L		0.5	0.6	0.8	1.5	0.9	1.3	1.3		2	1.1
Ortho-Phosphate as P	mg/L		0.01	0.01	0.01	0.01	<0.01	<0.01	0.17	<0.01	0.03	0.01
Biochemical Oxygen Demand	mg/L		2	<2	<2	<2	<2	<2	2		<2	2
Total Suspended Solids	mg/L			9580								4
Total Kjeldahl Nitrogen as N	mg/L		0.4	4.2	<0.4	<0.4	0.5	0.5	<0.4		0.16	<0.4
Total Coliforms	MPN/100mL	0	1	<2	<1	10	179	<1	<1	<1	2	3
Escherichia coli	MPN/100mL	0	1	<2	<1	<1	<1	<1	<1	<1	<1	<0
Fecal	CFU/100mL	0	2									
Aluminum	ug/L	OG <100	10	<5	<5	<5	<5	<5	<5	<5	<5	<5
Antimony	ug/L	6	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	ug/L	10	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Barium	ug/L	1000	5	32	5	5	5	6	5	5	6	<5
Beryllium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bismuth	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Boron	ug/L	5000	5	12	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	ug/L	5	0.3	<0.017	0.031	0.247	0.261	0.069	0.037	<0.09	<0.09	<0.09
Chromium	ug/L	50	2	<1	1	2	2	2	1	<1	1	<1
Cobalt	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	ug/L	AO </= 1000	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron	ug/L	AO </= 300	50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Lead	ug/L	10	0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese	ug/L	AO </= 50	2	30	<2	<2	<2	<2	<2	<2	<2	<2
Mercury	ug/L	1										
Molybdenum	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Nickel	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Phosphorus	mg/L		0.1	<0.02	<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Selenium	ug/L	10	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	ug/L		0.5	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Strontium	ug/L		5	156	25	24	24	25	26	23	26	26
Thallium	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Titanium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Uranium	ug/L	20	0.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vanadium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc	ug/L	AO </= 500	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sodium	mg/L		0.1	36.9	4.2	4.8	5	4.6	4.1	4.4	4	3.3
Potassium	mg/L		0.1	2.5	0.8	0.9	1	0.9	0.9	0.9	0.8	0.7
Calcium	mg/L		0.1	24.6	5.9	5.4	6.2	5.9	5.5	5	5.3	4.2
Magnesium	mg/L		0.1	3.5	1.5	1.5	1.6	1.5	1.4	1.3	1.4	1
Benzene	ug/L		1									
1,4-Dichlorobenzene	ug/L		1									
Methylene Chloride	ug/L		2									
Toluene	ug/L		2									
Vinyl Chloride	ug/L		0.6									
Chemical Oxygen Demand	mg/L		3									
Phenolics	mg/L		0.001									

Greenwood Sewage Treatment Plant Monitoring Well

Well 3A

Parameter	Unit	G/S (mg/L)	RDL	Baseline	3/27/2017	7/4/2017	10/2/2017	1/9/2018	3/26/2018	6/26/2018	9/25/2018	12/21/2018
Anion Sum	me/L			1.13	0.67	0.6	0.75	0.8	0.65	0.51	0.56	0.68
Cation Sum	mg/L			0.82	0.64	0.58	0.65	0.71	0.63	0.54	0.55	0.61
Bicarb Alkalinity (CaCO3)	mg/L		5	28	20	18	24	26	17	12	16	21
Carb Alkalinity	mg/L		10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hydroxide	mg/L		5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calculated TDS	mg/L	AO </= 500	1	56	36	32	38	42	36	29	30	37
Hardness	mg/L			25.5	21.2	19.1	21.7	24.1	20.6	18.2	17.9	20.9
Ion Balance	%			15.8	2.5	2.1	7.4	6.3	1.2	3	0.9	5.4
Langelier Index (20C)	NA			-1.72	-2.62	-2.76	-2.37	-2.37	-2.92	-2.98	-2.63	-2.39
Langelier Index (4C)	NA			-2.04	-2.94	-3.08	-2.69	-2.69	-3.24	-3.3	-2.95	-2.71
Saturation pH (20C)	NA			9.22	9.45	9.54	9.36	9.29	9.53	9.73	9.62	9.44
Saturation pH (4C)	NA			9.54	9.77	9.86	9.68	9.61	9.85	10.1	9.94	9.76
pH	NA	7.0-10.5		7.5	6.83	6.78	6.99	6.92	6.61	6.75	6.99	7
Reactive Silica as SiO2	mg/L		0.5	14.1	13.4	11.3	11.5	13.5	11.7	10.4	10.9	7.05
Chloride	mg/L	AO </= 250	1	16	6	6	7	6	7	7	7	13
Fluoride	mg/L	1.5	0.1	<0.1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	mg/L	AO </= 500	2	5	4	3	3	4	4	3	4	5
Alkalinity	mg/L		5	28	20	18	24	26	17	12	16	21
True Colour	TCU	AO </= 15	5	5	<5	<5	19	<5	5	6	<5	<5
Turbidity	NTU		0.1	4800	1.2	1.6	4	1.4	0.5	0.6	5	0.5
Electrical Conductivity	umho/cm		1	115	77	71	77	90	80	67	103	85
Nitrate+Nitrite as N	mg/L		0.05	0.21	0.3	0.12	0.16	0.41	0.42	0.19	0.52	0.63
Nitrate as N	mg/L	10	0.05	0.09	0.3	0.12	0.16	0.41	0.42	0.19	0.52	0.63
Nitrite as N	mg/L	1	0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	mg/L		0.05	<0.03	<0.03	<0.03	0.03	0.04	<0.03	<0.03	0.07	<0.03
Total Organic Carbon	mg/L		0.5	2.6	1.4	1	0.7	1.7	1.6	1.2	1.7	1.3
Dissolved Organic Carbon	mg/L		0.5	1.5	1.2	1.1	0.8	1	1.4	1.4	1.6	1.5
Ortho-Phosphate as P	mg/L		0.01	0.01	0.02	<0.01	<0.01	<0.01	0.19	<0.01	0.02	0.01
Biochemical Oxygen Demand	mg/L		2	<2	<2	<2	<2	<2	<2	7	<2	2
Total Suspended Solids	mg/L			7860								2
Total Kjeldahl Nitrogen as N	mg/L		0.4	1.6	<0.4	<0.4	6.7	0.5	<0.4	<0.4	0.2	<0.4
Total Coliforms	MPN/100mL	0	1	<2	<1	10	299	<1	<1	<1	1	0
Escherichia coli	MPN/100mL	0	1	<2	<1	<1	<1	<1	<1	<1	<1	<1
Fecal	CFU/100mL	0	2									
Aluminum	ug/L	OG < 100	10	<5	<5	<5	<5	<5	<5	<5	<5	<5
Antimony	ug/L	6	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	ug/L	10	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Barium	ug/L	1000	5	9	5	<5	<5	6	5	5	<5	5
Beryllium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bismuth	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Boron	ug/L	5000	5	8	<5	<5	<5	<5	5	<5	<5	6
Cadmium	ug/L	5	0.3	<0.017	0.051	0.032	0.056	0.051	0.023	<0.09	<0.09	<0.09
Chromium	ug/L	50	2	<1	1	1	1	2	1	<1	<1	<1
Cobalt	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	ug/L	AO </= 1000	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron	ug/L	AO </= 300	50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Lead	ug/L	10	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese	ug/L	AO </= 50	2	20	<2	<2	<2	<2	<2	<2	<2	<2
Mercury	ug/L	1										
Molybdenum	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Nickel	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Phosphorus	mg/L		0.1	<0.02	<0.02	0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Selenium	ug/L	10	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	ug/L		0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Strontium	ug/L		5	48	25	21	21	27	26	22	25	23
Thallium	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Titanium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Uranium	ug/L	20	0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vanadium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc	ug/L	AO </= 500	5	<5	<5	<5	11	11	<5	<5	<5	<5
Sodium	mg/L		0.1	6.4	4.5	4	4.3	4.6	4.9	3.7	3.8	4.2
Potassium	mg/L		0.1	1.5	0.8	0.8	0.9	0.9	0.9	0.8	0.8	0.8
Calcium	mg/L		0.1	7.8	6.2	5.5	6.4	7	6.1	5.3	5.2	6
Magnesium	mg/L		0.1	1.4	1.4	1.3	1.4	1.6	1.3	1.2	1.2	1.3
Benzene	ug/L		1									
1,4-Dichlorobenzene	ug/L		1									
Methylene Chloride	ug/L		2									
Toluene	ug/L		2									
Vinyl Chloride	ug/L		0.6									
Chemical Oxygen Demand	mg/L		3									
Phenolics	mg/L		0.001									

Greenwood Sewage Treatment Plant Monitoring Well

Well #4A

Parameter	Unit	G/S (mg/L)	RDL	Baseline	3/27/2017	7/4/2017	10/2/2017	1/9/2018	3/26/2018	6/26/2018	9/25/2018	12/21/2018
Anion Sum	me/L			1.73	0.68	0.82	0.93	0.86	0.7	0.7	0.82	0.75
Cation Sum	mg/L			1.72	0.66	0.71	0.74	0.74	0.7	0.68	0.71	0.33
Bicarb Alkalinity (CaCO3)	mg/L		5	24	15	25	29	26	17	21	25	22
Carb Alkalinity	mg/L		10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hydroxide	mg/L		5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calculated TDS	mg/L	AO </= 500	1	99	36	42	47	45	40	38	43	37
Hardness	mg/L			23.1	20.9	23.1	24.8	24.8	22.8	25.1	24.1	17.7
Ion Balance	%			0.2	2.4	7.3	11.1	7.5	0	1.9	6.8	17.2
Langelier Index (20C)	NA			-2.62	-2.91	-2.66	-2.47	-2.43	-2.91	-2.8	-2.53	-2.42
Langelier Index (4C)	NA			-2.94	-3.23	-2.98	-2.79	-2.75	-3.23	-3.12	-2.85	-2.74
Saturation pH (20C)	NA			9.42	9.6	9.33	9.23	9.27	9.5	9.38	9.31	9.49
Saturation pH (4C)	NA			9.74	9.92	9.65	9.55	9.59	9.82	9.65	9.68	9.81
pH	NA	7.0-10.5		6.8	6.89	6.67	6.76	6.84	6.59	6.53	6.78	7.07
Reactive Silica as SiO2	mg/L		0.5	11.4	12.1	13.4	12.4	10.6	11.7	5.5	13.3	13
Chloride	mg/L	AO </= 250	1	38	7	7	8	8	7	6	7	7
Fluoride	mg/L	1.5	0.1	<0.1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	mg/L	AO </= 500	2	6	4	4	4	4	4	4	4	4
Alkalinity	mg/L		5	24	15	25	29	26	17	21	25	22
True Colour	TCU	AO </= 15	5	<5	8	<5	17	<5	6	15	<5	5
Turbidity	NTU		0.1	2200	10.7	14.3	36.4	39.6	25.5	1.4	5	1.6
Electrical Conductivity	umho/cm		1	183	79	90	92	97	88	82	103	96
Nitrate+Nitrite as N	mg/L		0.05	0.71	0.66	0.51	0.55	0.46	1.07	0.44	0.52	0.46
Nitrate as N	mg/L	10	0.05	0.62	0.66	0.51	0.55	0.46	1.07	0.44	0.52	0.46
Nitrite as N	mg/L	1	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	mg/L		0.05	0.04	0.03	<0.03	0.04	0.04	<0.03	<0.03	0.07	<0.03
Total Organic Carbon	mg/L		0.5	2.5	1.1	1.5	1	1.7	1.7	1.8	2.2	1.6
Dissolved Organic Carbon	mg/L		0.5	1.6	1	1.4	1	1.2	1.5	1.7	2.2	1.5
Ortho-Phosphate as P	mg/L		0.01	<0.01	0.04	<0.01	0.01	<0.01	0.2	<0.01	0.03	0.02
Biochemical Oxygen Demand	mg/L		2	<2	<2	<2	<2	<2	3	5	<2	4
Total Suspended Solids	mg/L			4700								6
Total Kjeldahl Nitrogen as N	mg/L		0.4	1	0.5	0.4	<0.4	0.8	<0.4	<0.4	0.18	<0.4
Total Coliforms	MPN/100mL	0	1	<2	4	165	41	1	<1	<1	<1	8
Escherichia coli	MPN/100mL	0	1	<2	<1	<1	<1	<1	<1	<1	<1	<1
Fecal	CFU/100mL	0	2									
Aluminum	ug/L	OG < 100	10	<5	<5	<5	<5	<5	<5	<5	<5	<5
Antimony	ug/L	6	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	ug/L	10	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Barium	ug/L	1000	5	20	9	9	5	5	9	15	11	7
Beryllium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bismuth	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Boron	ug/L	5000	5	9	5	<5	5	5	6	<5	6	6
Cadmium	ug/L	5	0.3	0.038	0.139	0.146	0.065	0.779	0.108	<0.09	<0.09	0.45
Chromium	ug/L	50	2	1	2	2	2	2	2	1	2	<1
Cobalt	ug/L		1	1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	ug/L	AO </= 1000	2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron	ug/L	AO </= 300	50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Lead	ug/L	10	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese	ug/L	AO </= 50	2	61	<2	<2	<2	<2	<2	<2	<2	<2
Mercury	ug/L	1										
Molybdenum	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Nickel	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Phosphorus	mg/L		0.1	<0.02	<0.02	0.02		<0.02	<0.02	<0.02	<0.02	<0.02
Selenium	ug/L	10	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	ug/L		0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Strontium	ug/L		5	39	28	35	29	35	33	40	35	24
Thallium	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Titanium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Uranium	ug/L	20	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vanadium	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc	ug/L	AO </= 500	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sodium	mg/L		0.1	28	5	5.1	5	5	5	3.6	4.7	3.7
Potassium	mg/L		0.1	1.5	0.9	0.9	1	1	0.9	0.7	0.9	0.7
Calcium	mg/L		0.1	6.1	5.9	6.6	7.3	7.3	6.5	7.9	7	5.1
Magnesium	mg/L		0.1	1.9	1.5	1.6	1.6	1.6	1.6	1.3	1.6	1.2
Benzene	ug/L		1									
1,4-Dichlorobenzene	ug/L		1									
Methylene Chloride	ug/L		2									
Toluene	ug/L		2									
Vinyl Chloride	ug/L		0.6									
Chemical Oxygen Demand	mg/L		3									
Phenolics	mg/L		0.001									

Greenwood Sewage Treatment Plant Monitoring Well

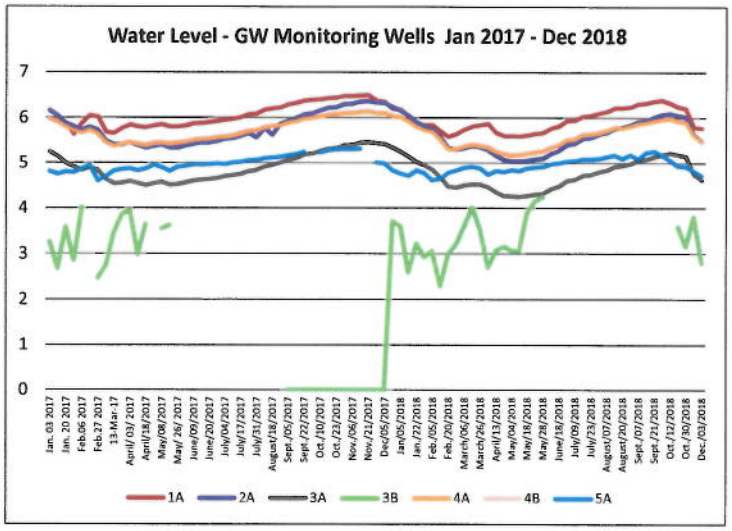
Well #5

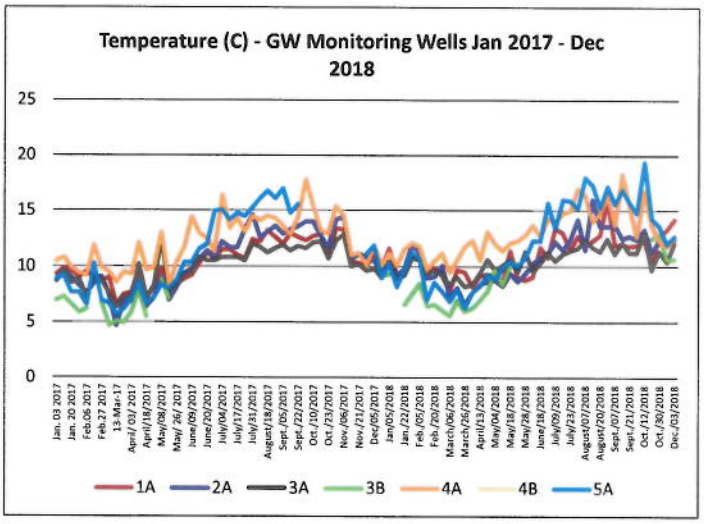
Parameter	Unit	G/S (mg/L)	RDL	Baseline	3/27/2017	7/4/2017	10/2/2017	1/9/2018	3/26/2018	6/26/2018	9/25/2018	12/21/2018
Anion Sum	me/L			1.06	0.59	0.72	0.92	0.78	0.65	0.82	Dry	0.72
Cation Sum	mg/L			0.85	0.62	0.69	0.79	0.71	0.66	0.7		0.57
Bicarb Alkalinity (CaCO3)	mg/L		5	23	16	21	28	23	18	24		25
Carb Alkalinity	mg/L		10	<10	<10	<10	<10	<10	<10	<10		<10
Hydroxide	mg/L		5	<5	<5	<5	<5	<5	<5	<5		<5
Calculated TDS	mg/L	AO </= 500	1	56	34	39	50	42	37	43		37
Hardness	mg/L			27.2	21.3	24.7	27.5	24.1	24	23.1		21.8
Ion Balance	%			10.8	2.6		7.6	5.1	1	7.5		11.5
Langelier Index (20C)	NA			-2.18	-2.78	-2.79	-2.59	-2.51	-2.87	-2.71		-2.42
Langelier Index (4C)	NA			-2.5	-3.1	-3.11	-2.91	-2.82	-3.19	-3.03		-2.74
Saturation pH (20C)	NA			9.28	9.5	9.34	9.17	9.29	9.4	9.35		9.29
Saturation pH (4C)	NA			9.6	9.82	9.66	9.49	9.6	9.72	9.67		9.61
pH	NA	7.0-10.5		7.1	6.72	6.55	6.58	6.78	6.53	6.64		6.87
Reactive Silica as SiO2	mg/L		0.5	6.3	4.8	5.9	6.3	5.8	4.5	13.3		4.7
Chloride	mg/L	AO </= 250	1	14	5	6	6	6	6	7		3
Fluoride	mg/L	1.5	0.1	<0.1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12		<0.12
Sulphate	mg/L	AO </= 500	2	7	4	4	4	5	4	4		4
Alkalinity	mg/L		5	23	16	21	28	23	18	24		25
True Colour	TCU	AO </= 15	5	<5	14	6	8	<5	<5	5		7
Turbidity	NTU		0.1	2300	9.6	5.4	48.4	8	34.2	10.9		1.4
Electrical Conductivity	umho/cm		1	105	73	81	92	86	79	102		87
Nitrate+Nitrite as N	mg/L		0.05	0.82	0.61	0.65	1.56	0.67	0.55	0.82		0.77
Nitrate as N	mg/L	10	0.05	0.75	0.61	0.65	1.56	0.67	0.55	0.82		0.77
Nitrite as N	mg/L	1	0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Ammonia as N	mg/L		0.05	0.03	<0.03	<0.03	0.03	0.03	<0.03	<0.03		<0.05
Total Organic Carbon	mg/L		0.5	2.5	1.1	1.4	<0.5	1.7	<0.5	1.7		1.7
Dissolved Organic Carbon	mg/L		0.5	1.7	1	1.4	<0.5	1.6	<0.5	1.6		1.5
Ortho-Phosphate as P	mg/L		0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.06	<0.01		<0.01
Biochemical Oxygen Demand	mg/L		2	<2	<2	<2	<2	<2	2	<2		5
Total Suspended Solids	mg/L			4870								10
Total Kjeldahl Nitrogen as N	mg/L		0.4	1.1	0.4	0.8	1.2	0.5	<0.4	<0.4		<0.4
Total Coliforms	MPN/100mL	0	1	690	<1	14	39	1	<1	1		13
Escherichia coli	MPN/100mL	0	1	<2	<1	<1	<1	<1	<1	<1		<1
Fecal	CFU/100mL	0	2									
Aluminum	ug/L	OG < 100	10	22	7	<5	<5	5	7	<5		<5
Antimony	ug/L	6	2	<2	<2	<2	<2	<2	<2	<2		<2
Arsenic	ug/L	10	2	<2	<2	<2	<2	<2	<2	<2		<2
Barium	ug/L	1000	5	27	14	15	<5	16	14	10		13
Beryllium	ug/L		2	<2	<2	<2	<2	<2	<2	<2		<2
Bismuth	ug/L		2	<2	<2	<2	<2	<2	<2	<2		<2
Boron	ug/L	5000	5	5	<5	<5	9	6	<5	<5		<5
Cadmium	ug/L	5	0.3	0.03	0.175	0.161	0.081	0.17	0.071	0.14		0.15
Chromium	ug/L	50	2	<1	1	1	2	2	1	2		<1
Cobalt	ug/L		1	<1	<1	<1	<1	<1	<1	<1		<1
Copper	ug/L	AO </= 1000	2	<2	<2	<2	<2	<2	<2	<2		<2
Iron	ug/L	AO </= 300	50	<50	<50	<50	<50	<50	<50	<50		<50
Lead	ug/L	10	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5
Manganese	ug/L	AO </= 50	2	49	<2	2	<2	2	3	3		2
Mercury		1										
Molybdenum	ug/L		2	<2	2	<2	<2	<2	<2	<2		<2
Nickel	ug/L		2	<2	<2	<2	<2	<2	<2	<2		<2
Phosphorus	mg/L		0.1	<0.02	<0.02	<0.02		<0.02	<0.02	<0.02		<0.02
Selenium	ug/L	10	2	<1	<1	<1	<1	<1	<1	<1		<1
Silver	ug/L		0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
Strontium	ug/L		5	40	34	39	41	41	39	35		33
Thallium	ug/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
Tin	ug/L		2	<2	<2	<2	<2	<2	<2	<2		<2
Titanium	ug/L		2	<2	<2	<2	<2	<2	<2	<2		<2
Uranium	ug/L	20	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
Vanadium	ug/L		2	<2	<2	<2	<2	<2	<2	<2		<2
Zinc	ug/L	AO </= 500	5	6	<5	<5	<5	<5	<5	<5		<5
Sodium	mg/L		0.1	6.5	1	4.1	4.9	4.6	3.8	5		2.8
Potassium	mg/L		0.1	0.8	0.7	0.7	1.1	0.8	0.7	1		0.6
Calcium	mg/L		0.1	8.4	6.9	7.6	8.7	8	7.8	6.6		7.1
Magnesium	mg/L		0.1	1.5	1	1.4	1.4	1	1.1	1.6		1
Benzene	ug/L		1									
1,4-Dichlorobenzene	ug/L		1									
Methylene Chloride	ug/L		2									
Toluene	ug/L		2									
Vinyl Chloride	ug/L		0.6									
Chemical Oxygen Demand	mg/L		3									
Phenolics	mg/L		0.001									

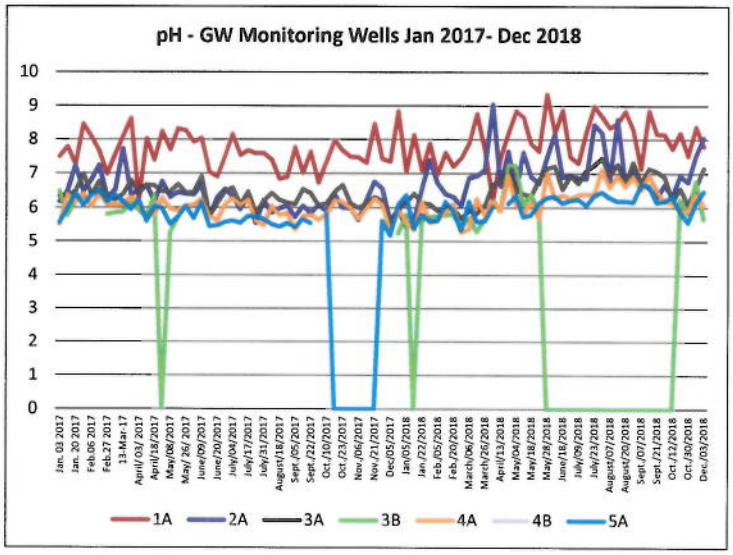
Appendix B

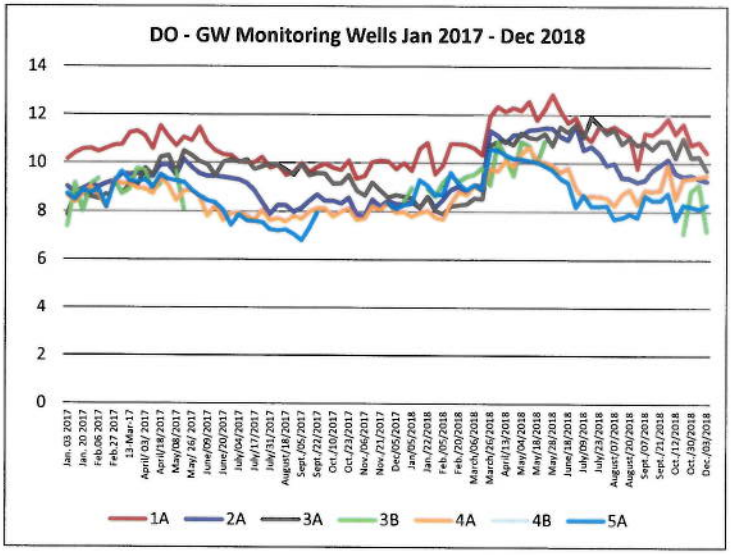
Greenwood Sewage Treatment Plant Groundwater Monitoring Wells – Weekly

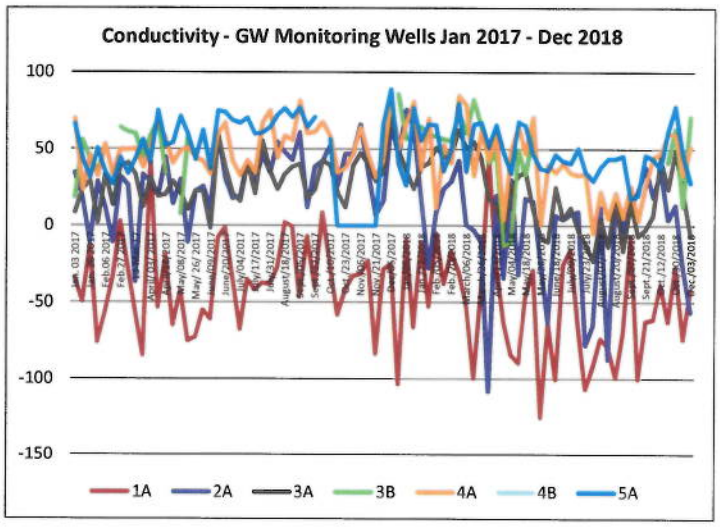
Greenwood STP Monitoring Wells - Weekly Parameters











MUNICIPALITY OF THE COUNTY OF KINGS

For By-Law information contact the Municipal Clerk
Tel: (902)678-6141 Fax: (902)678-9279 E-mail: municipalclerk@county.kings.ns.ca

BY-LAW # xx

MUNICPAL WATER CONSERVATION

SUBTITLE

A bylaw to regulate the consumption of water in accordance with the Municipality's Source Water Protection Plans.

PREAMBLE & ENACTMENT

WHEREAS the Municipality owns and operates Municipal Water Utilities, public water utilities serving the Village of Greenwood and the Village of Aylesford(Sandy Court);

AND WHEREAS the Municipality is required through regulations enabled under the legislation to implement a Source Water Protection Plan to ensure the long term sustainability of the ground water source supplying the Municipal Water Utilities;

AND WHEREAS the Source Water Protection Plan is based on the following principles:

The development and maintenance of a mutually beneficial, locally developed and administered Source Water Protection Program that protects the water source(s) of Municipal Water Utilities. The goal of the plan is to protect source water of the Municipal Water Utilities.

AND WHEREAS the Municipality desires to enact a by-law to temporarily limit water consumption that is not required to support public health and safety in times of high demand to satisfy regulatory requirements or operational requirements;

BE IT ENACTED by the Council of the Municipality as follows:

PART 1: TITLE

This By-Law may be cited as the Water Conservation Bylaw for the Municipality of the County of Kings, and shall apply to the area serviced by the Municipality.

PART 2: INTERPRETATION

In this bylaw the word "shall" is mandatory and not permissive. Word used in the present tense shall include the future. Words used in the singular shall include the plural except where otherwise indicated, and words used in the plural shall include the singular.

PART 3: DEFINITIONS

3.1 AESTHETIC CLEANING means the use of water for cleaning when it is not for a health or safety reason.

3.2 AESTHETIC WATER FEATURE means a fountain, pond, or other water feature that

primarily serves an aesthetic purpose. It does not include ponds that contain fish.

3.3 AUTOMATIC SHUT-OFF DEVICE means a device attached to a water hose that shuts off the supply of water automatically unless hand pressure is applied to operate the device.

3.4 COMMERCIAL CLEANING OPERATION means a company, partnership or person that offers commercial cleaning services, including pressure washing, window cleaning and other similar building cleaning services, to the public for a fee.

3.5 COMMERCIAL VEHICLE WASHING means commercial vehicle washing services offered to the public for a fee, but excludes car dealerships, fleet vehicle washing facilities, and charity car washes.

3.6 COUNCIL means the Council of the Municipality.

3.6 DRIP IRRIGATION means an irrigation system that delivers water directly to the root zone of the plant at a low flow rate through individual emission points (emitters) using droplets of water and excludes sprinkler irrigation systems, micro-spray systems, misting systems, and soaker hoses.

3.7 EDIBLE PLANT means a plant grown for the purpose of human consumption.

3.8 ENGINEER means the Director of Engineering and Public Works, Lands, and Park Services of the Municipality and includes a person acting under the supervision and direction of the Engineer.

3.9 GOLF COURSE means the greens, tee areas, and fairways that are designed and maintained as playing surfaces for golf, but does not include rough areas or lawns that are not maintained as playing surfaces.

3.10 GWU means the Greenwood Water Utility, a public water utility owned by the Municipality.

3.11 IMPERMEABLE SURFACE means a material added to the surface of the ground, or on the exterior of a building or structure that is impermeable to water, including but not limited to glass, wood, concrete, asphalt, paving stones and other similar materials.

3.12 LAWN means a cultivated area surrounding or adjacent to a building that is covered by grass, turf, or a ground cover plant such as clover, including areas such as boulevards, parks, school yards and cemeteries, but excluding golf courses, soil-based playing fields, and sand-based playing fields.

3.13 MUNICIPALITY means the Municipality of the County of Kings.

3.13 NEW LAWN means a Lawn that is newly established either by seeding or laying of new sod or turf.

3.14 OWNER as it refers to the owner of the property includes:

i. a part owner, joint owner, tenant in common or joint tenant of the whole or any part or parcel of land or a building;

ii. In the case of the absence or incapacity of the Person having title to the Lot or Building, a trustee, an executor, an administrator, a guardian, an agent, a mortgagee in possession or other Person having the care or control of any Lot or Building; and

iii. In the absence of proof to the contrary, the Person assessed for the taxes on the parcel of land or building.

3.15 PERMIT means a permit issued under Part 5 of the bylaw.

3.16 PERSON includes a corporation and the heirs, executors, administrators or other legal representatives of a Person, but specifically excludes the Municipality.

3.17 PUBLIC ANNOUNCEMENT means an advertisement or public service announcement in any of following mediums:

(a) a television or radio broadcast from a station that broadcasts to the area;
(b) a newspaper or other publication intended for general circulation, including one that is distributed without charge to the reader that contains news and advertising, and is distributed within the area at least once per week; and
(c) other methods as prescribed in a communication plan approved by Policy of Council.

3.16 RESTRICTION STAGE means restrictions upon the use of water as prescribed in this By-Law.

3.17 SAND-BASED PLAYING FIELD means a playing field that is constructed with a highly permeable sand-based root zone typically 30 to 40 centimetres deep over a drainage system with drain pipes bedded in gravel, and is designed and maintained to be playable year-round.

3.18 SCWU means the (Aylesford) Sandy Court Water Utility, a public water utility owned by the Municipality.

3.19 SOAKER HOSE means a garden hose or pipe with small holes that allows water to seep into the ground to the roots of plants, discharging water through the entire length of its porous surface.

3.20 SOIL-BASED PLAYING FIELD means a playing field that is covered with grass, sod or turf that is designed and maintained to be played upon, or that is used for sporting or other community events and activities, but does not include lawns, golf courses, or sand-based playing fields.

3.21 WATER used as a noun means Water supplied directly or indirectly by Municipal Utilities, whether or not mixed with rain Water, gray Water or recycled Water.

3.22 WATER used as a verb, and "Watering" or “Watered”, mean the application or

distribution of Water (used as a noun) to lands or plants but does not include Drip Irrigation.

3.23 WATER MANAGEMENT PLAN means a plan proposed by the owner or operator of a golf course, soil-based playing field, and sand-based playing field operators and approved by the Municipality of Kings. The plan sets out terms such as water use targets during the different stages of conservation, restrictions to reduce water use, and reporting requirements for the owner or operator.

3.24 WATER PLAY PARK means a recreational facility that is primarily outdoors, including spray pools and wading pools, spray parks, splash pads, and water slides.

3.25 WATERING LAWN means applying water to a lawn with any device or tool including but not limited to a sprinkler, hose, mister, or drip irrigation.

3.26 WATER SYSTEM means a water system; consisting of the source, structures, pipes, hydrants, meters, service laterals, devices, equipment or other things used, or intended, for the collection, transportation, pumping or treatment of water.

PART 4: IMPLEMENTATION OF WATER USE RESTRICTIONS

4.1 Stage 1 Restrictions are effective within all areas serviced by the Utility from May 15 to October 15 each year. The Engineer may suspend Stage 1 Restrictions, and rescind same, if, in the Engineer's opinion, there has been higher than average rainfall amounts and that a suspension will not adversely impact the Utility.

4.2 The Engineer is authorized to activate, extend or deactivate any Restriction Stages 1 through 3 inclusive as prescribed in Schedule "A" of this By-Law, in the Engineer's opinion:

a) Seasonal
b) drought conditions, or other water shortage
c) activated based on the rare occurrence of a significant emergency, such as an earthquake, flood, wild land and interface fire, severe weather, or a prolonged regional power outage that causes significant impacts to the water system infrastructure (e.g. damage to major water transmission lines, pump stations, or treatment plants).

4.3 The Municipality, in its absolute discretion, is authorized to impose at any time any other water use regulation, which it deems advisable to further limit the hours of external water use on permitted days and to ban completely the external use of water at any time.

4.4

a) The Engineer shall make a Public Announcement when either:
   i. Stage 1 Restrictions have been suspended under Section 4.1; or
   ii. Any additional restrictions that are activated, extended, or deactivated under Sections 4.2 and 4.3.
b) Public Announcements will include:
   i. The effective date of any actions implemented under Sections 4.1, 4.2 or 4.3;

ii. Information on additional restrictions activated or extended as per Sections 4.2 and 4.3; or
iii. Other information that the Engineer deems necessary for implementation of any provisions of Part 4.

4.5 Following a Public Announcement for the activation or extension of any additional restrictions, no Person shall use Water except in accordance the restriction in force at the time.

PART 5: WATER MANAGEMENT VARIANCE

5.1 The Owner of a Golf Course, Soil-Based Playing Field, or a Sand-Based Playing Field may apply in writing to the Engineer for a Water Management Variance to have their water usage regulated by a Water Management Plan. A variance is valid for three (3) years from the date of approval, inclusive of that date.

5.2 The Owner or his/her agent shall submit an application for a Water Management Variance. The application shall be in the form prescribed by the Engineer, including a Water Management Plan as prescribed in Section 6.3. A Water Management Variance Application Fee, as set out by Policy of Council, shall be submitted with the application. An application is not complete until all supporting documentation and all fees required by Policy of Council are received by the Engineer. Within 30 business days of receipt of a complete application, the Engineer shall approve the application if it complies with this By-Law. If the application is refused, the Engineer shall inform the applicant, in writing, of the reason(s) for the refusal.

5.3 Water Management Plan shall, at a minimum, contain the following information to the satisfaction of the Engineer:

(a) Map of the property subject to the Water Management Plan showing property boundary, areas to be Watered, connections to the Water System,
(b) Other sources of water at the subject property
(c) Water consumption rates between May 1 and October 15 of the previous 3 years;
(d) Proposed volume of Water to be consumed from May 1 to October 15 of each year for the term of the Water Management Variance;
(e) Measures that the Owner will use during the term of the Water Management Variance to conserve Water and to reduce the use of Water;
(f) Schedule for Watering specified areas within the operation for each Restrictions Stage, except Stage 3;
(g) reporting of actual Water use to the Engineer not less than once per month when Stage 1 Restrictions is in force, and not less than once every two weeks when Stage 2 Restrictions are in force; and
(h) any other information, commitments, conditions or restrictions the Engineer may require.

5.4 The Engineer may terminate or suspend a Water Management Variance by notifying the Owner or his/her agent in writing at least five business days before the termination or suspension date.

5.5 All Water Management Variances shall be suspended when the Engineer activates a Stage 4 Restriction or when the Municipality exercises its authority to impose further restrictions under Section 4.3. The suspension will terminate when the applicable restriction is deactivated.

5.6 An Owner may terminate a Water Management Variance by notifying the Engineer in writing on the date specified in the written termination or the date on which the Engineer receives the written termination, whichever is later.

5.7 An Owner may apply, in the same manner prescribed in Section 5.2, to modify an approved Water Management Variance.

PART 6: WATERING PERMIT

6.1 A Person who installs a new Lawn, either by seeding or by placing sod or turf or wishes to apply nematodes to an existing lawn may apply in writing to the Engineer for a Watering Permit authorizing the applicant to Water when Stage 1 Restrictions or Stage 2 Restrictions are in force. A permit is valid for twenty-one (21) calendar days from the date of approval, inclusive of that date and specific to that property civic number. The applicant may apply for a one-time twenty-one (21) calendar day extension, except for Watering Permits issued for nematode application.

6.2 All applications for a permit or an extension shall be in the form prescribed by the Engineer. A Watering Permit Application Fee, as set out by Policy of Council, shall be submitted with the application. An application is not complete until all supporting documentation and all fees required by Policy of Council are received by the Engineer. Within five (5) business days of receipt of a complete application, the Engineer shall approve the application if it complies with this By-Law. If the application is refused, the Engineer shall inform the applicant, in writing, of the reason(s) for the refusal.

6.3 The Engineer will not approve any applications under Part 6 while a Stage 3 Restriction is in effect; or when the Municipality has imposed further restrictions under Section 4.3.

6.4 All Watering Permits shall be suspended when the Engineer activates a Stage 3 Restriction; or when the Municipality exercises its authority to impose further restrictions under Section 4.3. The suspension will terminate when the applicable restriction is deactivated.

6.5 A Person who has been issued a Watering Permit must fix the Watering Permit to a post on the premises facing the street, beside the principal driveway so that it is visible from the street.

6.6 The Engineer may revoke a Permit issued under this section for any reason.

PART 7: OFFENCES AND PENALTIES

Any Person who contravenes any section of this By-Law shall be guilty of an offence and shall be liable on conviction to a penalty of not less than $275 and not more than $10,000.00 and each day during which any violation, contravention or breach shall continue shall be deemed as a separate offence.

PART 8: MUNICIPALITY EXEMPTION

Notwithstanding the activation of any stage of water restrictions, the Municipality may use water and is exempt from the water restrictions applicable to that stage, where use of water is needed to carry out activities needed for protecting public health and safety.

PART 9: SEVERABILITY

If any portion of this By-Law is declared invalid by a court of competent jurisdiction, then the invalid portion must be severed and the remainder of the bylaw is deemed valid.

PART 10: EFFECTIVE DATE

This By-Law comes into force and effect on the XX day of XX, 2018.

Schedule "A" – Restriction Stages

GENERAL RESTRICTIONS FOR ALL STAGES (1 THROUGH 3)

1) All hoses must have an automatic shut-off device.
2) Water must not unnecessarily run off on impermeable surfaces such as driveways, curbs, pathways, or gutters when watering lawns and plants.
3) Artificial playing turf and outdoor tracks must not be watered except for a health or safety reason.
4) Hoses and taps must not run unnecessarily.
5) Irrigation systems must not be faulty, leaking, or misdirected.

STAGE 1 WATER RESTRICTIONS

User	Water Use	Restriction
RESIDENTIAL	Watering lawns	From 4am to 9am and from 4 pm to 9 pm
	Watering new lawns or lawns being treated for invasive species.	Outside restricted lawn watering times if in compliance with a local government permit
	Watering trees, shrubs, and flowers excluding edible plants	On any day from 4 am to 9 am if using a sprinkler On any day at any time if using a handheld hose, soaker hose, water container, or drip irrigation
NON-RESIDENTIAL	Watering lawns (mixed-use buildings e.g. residential and commercial should follow Non-residential watering times)	From 4am to 9am and from 4 pm to 9 pm
	Watering new lawns or lawns being treated invasive species	Outside restricted lawn watering times if in compliance with a local government permit
	Watering trees, shrubs, and flowers excluding edible plants	On any day from 4 am to 9 am if using a sprinkler On any day at any time if using a handheld hose, soaker hose, water container, or drip irrigation

GOVERNMENTS/ SCHOOLS/PARKS	Watering lawns and grass boulevards	From 4am to 9am and from 4 pm to 9 pm
	Watering new lawns or lawns being treated for invasive species.	Outside restricted lawn watering times if in compliance with a local government permit
	Watering trees, shrubs, and flowers excluding edible plants	On any day from 1 am to 9 am if using a sprinkler On any day at any time if using a handheld hose, soaker hose, water container, or drip irrigation
	Watering soil-based playing fields	On any day from 7 pm to 9 am, except if: - Watering newly over-seeded fields if in compliance with a local government permit - Operating under an approved local government water management plan
	Watering sand-based playing fields	On any day from 7 pm to 9 am, except if: - Watering newly over-seeded fields if in compliance with a local government permit - Operating under an approved local government water management plan
	~~Flushing water mains~~	~~Prohibited~~

STAGE 2 WATER RESTRICTIONS:

Stage 2 restrictions respond to moderate drought conditions, or other water shortage, and achieve further reductions in drinking water use by implementing a lawn watering reduction and additional stricter measures.

User	Water Use	Restriction
RESIDENTIAL	Watering lawns	Even-numbered civic addresses: on Wednesdays and Saturdays from 4 am to 9 am, 4 pm to 9 pm. Odd-numbered civic addresses: on Thursdays and Sundays from 4
	Watering new lawns or lawns being treated for invasive species.	Outside restricted lawn watering times if in compliance with a local government permit
	Watering trees, shrubs, and flowers excluding edible plants	On any day from 4 am to 9 am if using a sprinkler On any day at any time if using a handheld hose, soaker hose, water container, or drip irrigation
	Washing impermeable surfaces	Prohibited except if: - For a health or safety reason - Preparing a surface for painting or similar treatment - Aesthetic cleaning by a commercial cleaning operation
	Topping up or filling aesthetic water features	Prohibited

User	Water Use	Restriction
NON-RESIDENTIAL	Watering lawns (mixed-use buildings e.g. residential and commercial should follow Non- residential watering times)	Even-numbered civic addresses: on Mondays from 1 am to 6 am Odd-numbered civic addresses: on Tuesdays from 1 am to 6 am
	Watering new lawns or lawns being treated for invasive species	Outside restricted lawn watering times if in compliance with a local government permit
	Watering trees, shrubs, and flowers excluding edible plants	On any day from 1 am to 9 am if using a sprinkler On any day at any time if using a handheld hose, soaker hose, water container, or drip irrigation
	Watering golf courses	Fairways watering anytime on any one day in a 7-day period, except if operating under an approved local government water management plan
	Washing impermeable surfaces	Prohibited except if: - For a health or safety reason - Preparing a surface for painting or similar treatment - Aesthetic cleaning by a commercial cleaning operation
	Topping up or filling aesthetic water features	Prohibited

User	Water Use	Restriction
GOVERNMENTS/SCHOOLS/PARKS	Watering lawns and grass boulevards	Even-numbered civic addresses: on Mondays from 1 am to 6 am Odd-numbered civic addresses: on Tuesdays from 1 am to 6 am
	Watering new lawns or lawns being treated for invasive species.	Outside restricted lawn watering times if in compliance with a local government permit
	Watering trees, shrubs, and flowers excluding edible plants	On any day from 1 am to 9 am if using a sprinkler On any day at any time if using a handheld hose, soaker hose, water container, or drip irrigation
	Watering soil-based playing fields	No more than 4 days in a 7-day period from 7 pm to 9 am, except if: - Watering newly over-seeded fields if in compliance with a local government permit - Operating under an approved local government water management plan
	Watering sand-based playing fields	On any day from 7 pm to 9 am, except if: - Watering newly over-seeded fields if in compliance with a local government permit - Operating under an approved local government water management plan
	Flushing water mains	Prohibited
	Operating water play parks and pools	Prohibited except water play parks with user-activated switches
	Topping up or filling aesthetic water features	Prohibited

PART 3 – STAGE 3 WATER RESTRICTIONS

Stage 3 restrictions respond to serious drought conditions, or other water shortages, and achieve further reductions in drinking water use by implementing a lawn watering ban and additional stricter measures.

Additional measures may be initiated at the discretion of the Engineer based on the rare occurrence of a significant emergency, such as an earthquake, flood, wild land and interface fire, severe weather, or a prolonged regional power outage that causes significant impacts to the water system infrastructure (e.g. damage to major water transmission lines, pump stations, or treatment plants).

In addition to the following outdoor water restrictions, the Municipality could request that industrial water users implement voluntary reductions or reschedule production processes that consume large amounts of water until Stage 4 is deactivated.

User	Water Use	Restriction
RESIDENTIAL	Watering lawns	Prohibited
	Watering new lawns or lawns being treated for invasive species.	Local government permits issued in Stages 1 or 2 remain in effect until permit expires No new permits issued or renewed
	Watering trees, shrubs, and flowers excluding edible plants	Prohibited if using a sprinkler or soaker hose On any day at any time if using a handheld hose, water container, or drip irrigation
	Washing impermeable surfaces	Prohibited except if: - For a health or safety reason - Preparing a surface for painting or similar treatment by a commercial cleaning operation
	Topping up or filling aesthetic water features	Prohibited
	Topping up or filling pools and hot tubs	Prohibited
	Washing vehicles and boats	Prohibited except to clean windows, lights, mirrors, license plates, and boat engines for safety

User	Water Use	Restriction
NON-RESIDENTIAL	Watering lawns (mixed-use buildings e.g. residential and commercial should follow Non- residential watering times)	Prohibited
	Watering new lawns or lawns being treated for invasive species.	Local government permits issued in Stages 1 or 2 remain in effect until permit expires No new permits issued or renewed
	Watering trees, shrubs, and flowers excluding edible plants	Prohibited if using a sprinkler or soaker hose On any day at any time if using a handheld hose, water container, or drip irrigation
	Watering golf courses	Fairways watering prohibited except if operating under an approved local government water management plan
	Washing impermeable surfaces	Prohibited except if: - For a health or safety reason - Preparing a surface for painting or similar treatment by a commercial cleaning operation
	Topping up or filling aesthetic water features	Prohibited
	Topping up or filling pools and hot tubs	Prohibited except for pools and hot tubs with a permit to operate in accordance with health authorities having jurisdiction over pool and hot tub regulation
	Washing vehicles and boats	Prohibited except to clean windows, lights, mirrors, licence plates, and boat engines for safety
	Commercial vehicle washing	Prohibited except if: - A facility that installed an automatic vehicle wash system before November 1, 2017, is operating on a basic wash and rinse cycle only - A facility that installed an automatic vehicle wash system after November 1, 2017, is operating using a water recycling system that achieves a minimum 60% water recovery rate over the full wash cycle A hand wash and self-service facility, is operating using high-pressure wands or brushes that achieve a maximum flow rate of 11.4 litres per minute

User	Water Use	Restriction
GOVERNMENTS/SCHOOLS/PARKS	Watering lawns and grass boulevards	Prohibited
	Watering new lawns or lawns being treated invasive species.	Local government permits issued in Stages 1 or 2 remain in effect until permit expires No new permits issued or renewed
	Watering trees, shrubs, and flowers	Prohibited if using a sprinkler or soaker hose On any day at any time if using a handheld hose, water container, or drip irrigation
	Watering soil-based playing fields	No more than 3 days in a 7-day period from 7 pm to 9 am except if: - Watering newly over-seeded fields if in compliance with a local government permit - Operating under an approved local government water management plan
	Watering sand-based playing fields	No more than 5 days in a 7-day period from 7 pm to 9 am, except if: - Watering newly over-seeded fields if in compliance with a local government permit - Operating under an approved local government water management plan
	Operating water play parks	Prohibited except water play parks with user-activated switches
	Topping up or filling aesthetic water features	Prohibited
	Topping up or filling pools and hot tubs	Prohibited except for pools and hot tubs with a permit to operate in accordance with health authorities having jurisdiction over pool and hot tub regulation
	Washing vehicles and boats	Prohibited except to clean windows, lights, mirrors, licence plates, and boat engines for safety

MUNICIPALITY OF THE COUNTY OF KINGS

Greenwood Water Utility Source Water Protection Committee Policy

Creation Date: August 28, 2012
Approval Date: September 18, 2012
Revision Date: September 2, 2014
May 3, 2016

Policy Category: Engineering & Public Works
Next Review Date: September 2015
Replaces:

1. Committee Mandate:

The function of the Greenwood Source Water Protection Committee ("*the Committee*") is to advise Municipal Council and staff on the development and maintenance of a mutually beneficial, locally developed and administered Source Water Protection Program that protects the water source(s) of the Greenwood Water Utility ("*the Utility*").

2. Authority:

Nova Scotia Environment requires the Municipality to implement certain policies and procedures to safeguard the source waters of the Greenwood Water Utility as part of the Greenwood Water Utility's operating permits. Per Section 23(1) (c) and Section 24 of the Municipal Government Act, Municipal Council authorizes the formation of the Committee and authorizes it to conduct the activities outlined in this Policy on its behalf.

3. Definitions:

3.1 "EPW" means the Engineering and Public Works section of the Municipality of the County of Kings.
3.2 "Source Water Protection Program" means a program developed by the stakeholders of a water utility to protect and monitor the health of a source water supply.
3.3 "Source Water Protection Area Boundary" means the area of land which contributes water to the Utility's production wells.

4. Committee Composition:

The Committee shall be composed of stakeholders of the Utility. The Committee will consist of the following:

- Planning Advisor (Municipality's Manager of Community Development or designate)

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- Engineering Advisor (Municipality's Manager of EPW, Lands and Parks Services or designate)
- District Councillor
- Citizen Representative appointed by Council for a two year term commencing in the fall of the appointment year
- A Commissioner from the Village of Greenwood appointed by Council for a two year term commencing on the first day of May of the appointment year
- Representative of Nova Scotia Environment
- Representative from the Greenwood Water Utility (employee of the Municipality)
- Representative from 14 Wing Greenwood (Ex officio, non-voting)

The Chair shall be the District Councillor. The Vice-Chair will be appointed by members of the Committee.

5. Related Policies, Procedures and Legislation:

Environment Act 1994-95, Province of Nova Scotia
Greenwood Wellfield Approval for Water Withdrawal No. 2004-039399-A01, Province of Nova Scotia
Greenwood Water Utility Approval to Operate No. 2009-066399-A01, Province of Nova Scotia
Water for Life: Nova Scotia's Water Resource Management Strategy, Province of Nova Scotia
Water and Wastewater Facilities and Public Drinking Water Supplies Regulations, Province of Nova Scotia

6. Responsibilities:

The Committee is responsible for advising Council about the following issues:

6.1 *Source Water Protection Area Boundary*

a) Identify and delineate the source water supply area.
b) Assess the delineated boundary to ensure it adequately encompasses the source water supply area and meets the needs of the stakeholders.
c) Recommend changes to the delineated area, as required, within the confines of the regulations.

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6.2 *Identify Potential Contaminates and Assess Risks*

a) Identify and document potential sources of contamination.
b) Assess the risk they pose to the source water supply area.
c) Recommend to staff and Council as appropriate any changes in laws, policies, or regulations governing the Utility.

6.3 *Source Water Protection Management Plan*

a) Review and comment on the Plan and any proposed amendment thereto.
b) Work with and consult community members and the Village of Greenwood when drafting the Source Water Protection Plan or revisions thereto.
c) Work with staff to develop community education and awareness strategies on the Plan.
d) Review monitoring results at an acceptable frequency, at least annually, to verify the continued quality of the source water to ensure the management plan is effective and current to conditions within the supply area.

6.4 *Compliance with Laws, Regulations and Guidelines*

Review as required, reports from staff and others relating to the Utility's compliance with laws, regulations and other obligations governing the Source Water Protection Plan.

7. Operating Procedures and Principles:

The Committee shall conduct itself in accordance with the following principles and procedures:

7.1 *Committee Values*

The Committee and staff are expected to operate in compliance with the Municipal Code of Conduct, and the policies, laws, and regulations governing the Municipality. The Committee is expected to use a consensus-based approach to its decision making.

7.2 *Communications*

The Committee members will maintain direct, open, frank communications with staff, Council and other key advisors as appropriate.

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7.3 *Policy Development*
Review and comment on all applicable materials to help staff and Council to establish technically sound and achievable goals using a combination of management practices as referred by NSE; Acquisition of Land, By-laws, Best Management Practices, Contingency Plans, Designation, and Education. The Committee may invite experts or other appropriate resource person(s) to provide advice on matters before it and may in good faith rely upon any reports and findings they provide.

7.4 *Meetings*
Meetings shall be held semi-annually at a time to be established by the Committee. Special meetings may be convened throughout the year at the request of the Chair, the Utility Representative, or at the written request by a majority of the Committee's member. A copy of the minutes of each meeting shall be provided to each member in a timely fashion.

7.5 *Accountability and Reporting*
The Committee is accountable to Council. The Committee shall report to Council as often as necessary but at least annually. Reporting shall normally be done through the Committee's Chair.

7.6 *Committee Self Assessment*
The Committee shall annually review, discuss and assess its performance. The Committee will review this Policy on an annual basis and recommend any changes to this Policy that may be considered appropriate.

8. Quorum and Decision Making:

A quorum consists of a majority of the voting members of the Committee. The Committee shall use a consensus-based approach in its decision making. The Chair may put the matter to a vote if they deem that a consensus is not achievable. Each Committee member is entitled to one (1) vote and decisions shall be majority vote of those present. The Chair presiding at any meeting of the Committee shall have a vote in all matters considered by the Committee. In the event of a tie the motion is defeated. In the absence of the Chair of the Committee, the Vice-Chair will preside over the meeting.