



## **TOWN OF ARNPRIOR WATER FILTRATION PLANT (WFP)**

### **2007 SUMMARY REPORT**

January 1, 2007 – December 31, 2007

#### **Introduction**

The following annual summary report has been prepared to summarize the raw and treated water characteristics as well as changes and improvements during 2007 at the Arnprior Water Filtration Plant. This report covers the period from January 1 to December 31, 2007.

#### **System**

Drinking Water System Number:	220000932
Drinking Water System Name:	Arnprior Water Filtration Plant
Drinking Water System Owner:	Town of Arnprior
Drinking Water System Category:	Large Municipal Residential

#### **Compliance with Terms and Conditions of the Certificate of Approval**

- The Town of Arnprior owns and operates the Water Filtration Plant, and complies with the terms and conditions of the Certificate of Approval issued to the WFP.
- Plant Changes and Improvements:
  - The Ammonia storage, pumping and piping system has been redesigned and upgraded, and the treated water has been chloraminated since the spring of 2007.
  - The water tower interior has been sandblasted and relined.
- In accordance with Ontario Regulation 170, all sampling and testing of the raw and treated water is carried out in the plant laboratory and a certified contracted laboratory, including the quarterly sampling requirements.

- Flow meters are calibrated annually by a third party, for flow measurement of the water taken from the Madawaska River and to the distribution system.
- Continuous water quality analyzers with alarm systems are installed for chlorine residual, turbidity of filtered water and fluoride.
- All operators are certified to the appropriate level, with ongoing training requirements taking place at the filtration plant.
- An operations manual is kept at the filtration plant, and updated as required.
- All chemicals used in the water treatment process meet AWWA and ANSI standards.

### **Non-Compliance with Terms and Conditions of the Certificate of Approval**

There were no non-compliance issues during this reporting period

### **Adverse Test Results and Other Problems**

There was one adverse water quality indicator observed in the Arnprior water distribution system in 2007. On October 11, 2007, a notification was made under schedule 16-3 of Ontario Reg. 170/03, indicating a Total Coliform count of 2 with a Total Chlorine result of 0.76 mg/l in a sample taken at 10 Didak Drive. Notification was made to the Spills Action Center and the Local Ministry of Health. The site was resampled, and flushing of the area distribution system was initiated. The results of the resample indicated a Total Coliform count of 0, indicating no adverse conditions present.

### **Water Production**

The raw, treated and backwash flows at the plant are measured using Endress + Hauser Electromag meters.

### **Raw Water Production**

- The average daily raw water flow was measured to be 5,205 m<sup>3</sup>.
- The maximum daily flow recorded was 7,144 m<sup>3</sup> on July 26.
- The total annual raw water flow for 2007 was 1,900,263 m<sup>3</sup>. This volume is down from the 2006 flow of 2,011,585 m<sup>3</sup>, a decrease of 111,322 m<sup>3</sup>.
- The Town's current permit to take water from the Madawaska River is for 15,000 m<sup>3</sup> per day.

## **Treated Water Production**

- The current Certificate of Approval for the Arnprior plant is 7,300 m<sup>3</sup>/day of raw water production.
- There were no flow rate accidents in 2007, the average daily treated water flow was measured to be 4,958 m<sup>3</sup>/day.
- The maximum daily treated water flow was 6,513 m<sup>3</sup> on August 2, 2007.
- The total annual treated water flow for 2007 was 1,809,094 m<sup>3</sup>. This volume is down from the 2006 flow of 1,880,585 m<sup>3</sup>, a decrease of 71,491 m<sup>3</sup>.
- The per capita use of treated water is 789 litres per day, this is above the typical Canadian average of 400 – 500 litres per day. This higher than average per capita consumption is attributed to industrial use.

## **Backwash Water Consumption**

- The average daily backwash water flow was 318 m<sup>3</sup>.
- The total annual backwash water flow was 116,305 m<sup>3</sup>.
- The backwash water is treated in a residuals treatment system where the solids are removed and pumped to the Water Pollution Control Centre for treatment, and the clear supernatant is pumped to the Madawaska River.
- The Arnprior WTP Certificate of Approval stipulates a maximum Total Suspended Solids of 25 mg/l in the supernatant, in 2007 the average TSS was 9 mg/l.

## **Flow Rate Exceedances**

The Arnprior Certificate of Approval states a treatment process maximum flow rate of 84.5 liters per second. This flow rate is manually imputed into a flow control valve, so that there are no flow rate exceedances.

## **Water Quality**

The Town of Arnprior carries out all the sampling and analysis of the raw and treated water as per Ontario Drinking Water Standard guidelines. Certain parameters are done at different frequencies such as daily, weekly, monthly and annually.

## **Quarterly and Annual Water Sampling**

Other sampling and testing carried out at various frequencies were for Volatile Organic compounds, Inorganic compounds, Pesticides and PCB. These samples are taken by plant staff and sent to a contracted laboratory. The testing revealed that no parameters were outside of maximum acceptable concentrations.

## Water Treatment Chemicals

The Arnprior Water Filtration Plant uses Gas Chlorine, Aqua Ammonia, Aluminum Sulfate, Sodium Carbonate, Hydrofluorosilicic Acid (fluoride) and sometimes, during the summer months, a Cationic Polymer is used as a flocculent and settling aid.

### Raw Water Flows 2007

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	4,918	5,389	5,340	4,823	5,277	5,058	4,912	6,588	5,159	4,975	5,462	4,419
2	5,001	5,226	4,831	5,163	5,015	4,634	5,468	6,282	4,831	5,926	4,590	4,973
3	4,943	5,222	5,336	4,850	5,115	5,163	5,479	5,972	5,717	5,734	4,819	4,860
4	5,537	5,328	5,159	5,115	5,405	5,447	5,333	6,059	5,365	5,468	4,925	5,053
5	4,975	5,382	5,318	4,005	4,809	4,969	5,732	6,051	5,303	5,358	5,058	4,859
6	5,000	5,101	5,049	5,090	5,059	5,236	5,650	5,666	5,819	4,891	4,831	4,804
7	5,484	5,272	4,913	4,608	5,591	5,247	5,117	6,312	5,467	4,646	4,863	4,970
8	5,137	5,841	5,371	4,628	5,233	5,072	5,031	6,282	5,379	5,384	5,074	4,520
9	5,357	5,294	4,849	5,443	5,239	5,343	5,367	6,130	5,410	4,605	4,526	4,995
10	4,973	5,123	5,208	4,791	5,654	5,293	5,426	5,990	5,550	5,105	4,926	4,848
11	5,359	5,334	4,933	4,858	5,193	5,546	5,669	5,958	5,146	5,341	4,947	5,173
12	4,838	5,129	5,255	5,096	4,917	6,249	5,262	6,397	5,146	4,869	4,607	4,809
13	5,320	5,256	5,201	4,879	5,391	5,641	4,872	6,102	5,172	5,926	4,933	5,078
14	5,049	5,350	5,005	4,455	5,214	6,212	4,854	6,001	5,156	6,509	4,821	4,735
15	4,981	5,123	5,381	4,863	5,000	5,733	5,495	5,624	4,760	4,963	4,660	4,522
16	5,286	5,187	4,991	5,230	5,315	5,935	5,227	5,910	5,021	3,181	5,524	4,883
17	5,055	5,200	4,557	4,958	4,824	5,789	5,616	5,271	5,452	5,152	4,606	4,865
18	5,158	5,286	5,430	4,980	5,067	5,931	5,452	5,265	5,412	4,996	4,902	4,801
19	4,799	5,258	5,095	5,015	5,136	5,722	5,252	5,268	5,412	5,038	4,860	5,140
20	5,232	5,400	4,986	4,962	4,794	5,582	5,113	5,695	5,523	4,716	4,786	4,761
21	4,955	5,174	5,223	4,762	5,365	5,438	4,897	6,046	5,230	5,248	4,681	4,448
22	5,136	5,352	5,045	5,411	6,517	5,076	4,979	5,365	5,401	5,365	4,968	4,810
23	5,178	5,279	5,176	4,873	6,028	5,165	5,645	5,363	5,246	6,129	4,289	4,833
24	5,082	4,922	4,552	4,884	6,198	5,457	5,091	5,216	5,476	4,059	4,827	4,225
25	5,140	5,325	5,140	5,272	5,559	5,980	5,285	5,085	5,476	5,022	4,876	4,091
26	5,359	5,389	4,981	4,979	5,206	6,318	7,144	5,175	5,393	4,805	4,944	4,659
27	5,212	5,245	4,943	4,519	5,369	6,298	6,000	5,096	5,139	4,900	4,723	4,429
28	5,330	5,442	4,712	5,052	5,417	5,990	5,383	5,525	5,256	5,012	4,945	4,599
29	5,233		5,743	4,787	5,759	5,330	5,622	5,715	4,800	5,084	4,723	4,661
30	5,160		5,425	4,904	5,452	4,757	5,965	5,237	4,975	4,995	4,740	4,345
31	5,289		4,888		6,362		5,952	4,927		4,713		4,830
Total	159,475	147,827	158,036	147,255	166,480	165,611	168,290	177,573	158,595	158,115	145,436	146,998
Average	5,144	5,280	5,098	4,908	5,370	5,520	5,429	5,728	5,286	5,100	4,848	4,742
Min	4,799	4,922	4,552	4,005	4,794	4,634	4,854	4,927	4,760	3,181	4,289	4,091
Max	5,537	5,841	5,743	5,443	6,517	6,318	7,144	6,588	5,819	6,509	5,524	5,173
			Yearly Average		5,205							
			Yearly Min		3,181							
			Yearly Max		7,144							

## Treated Water Flows 2007

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	4,568	5,019	5,153	5,001	4,447	4,637	4,206	6,142	4,450	5,306	4,568	4,635
2	4,632	4,805	4,555	4,344	5,288	5,175	5,555	6,513	4,856	6,015	4,732	4,163
3	5,127	4,930	4,924	4,996	5,125	5,033	5,537	5,674	5,563	5,381	4,122	5,033
4	4,812	5,158	5,084	4,240	4,542	4,812	4,941	5,463	4,975	5,293	4,983	4,488
5	4,822	5,155	4,643	4,261	5,050	4,915	5,151	5,546	5,260	4,940	4,897	4,657
6	4,945	4,870	4,874	4,176	5,067	5,381	5,758	6,067	5,730	4,370	4,422	4,860
7	4,744	4,782	4,643	4,848	4,777	5,045	5,073	6,100	5,047	4,832	5,095	4,290
8	5,066	5,675	4,953	4,475	5,524	4,661	4,676	5,611	5,205	4,528	4,359	4,628
9	5,093	4,709	4,783	4,541	5,054	4,592	5,331	5,850	5,486	3,898	4,745	4,378
10	4,828	4,853	4,551	4,790	4,934	5,822	5,092	6,350	5,057	4,952	4,347	4,967
11	4,645	5,210	4,681	4,924	5,391	5,320	4,992	5,607	5,283	5,004	4,868	4,494
12	5,019	5,072	4,974	4,422	4,785	5,642	5,275	5,862	5,282	4,830	4,310	4,731
13	4,504	4,683	5,008	4,221	4,656	5,783	5,093	6,010	5,132	5,554	5,005	4,842
14	4,705	4,935	4,794	4,883	5,351	6,092	4,473	6,181	5,040	6,126	4,300	4,198
15	5,089	5,100	4,627	4,580	5,037	5,389	4,868	5,375	4,259	4,810	5,080	4,696
16	4,762	4,532	4,721	4,442	4,572	5,256	5,324	5,267	5,231	4,123	4,194	4,181
17	4,651	4,941	4,608	4,692	5,183	5,898	5,696	4,836	4,896	4,931	4,583	4,740
18	4,900	5,208	4,766	5,087	4,480	5,862	5,204	5,387	5,503	4,973	4,492	4,843
19	4,877	4,748	4,889	4,693	4,595	5,267	4,716	5,111	5,502	4,483	4,849	4,452
20	4,447	5,179	4,927	4,565	4,704	4,975	4,547	5,405	5,077	4,927	4,226	4,940
21	4,677	5,043	4,600	4,743	5,632	5,035	5,136	5,494	5,390	4,717	4,926	4,155
22	4,815	4,762	4,990	4,691	6,095	5,018	5,158	5,283	4,886	5,140	4,305	4,180
23	4,998	5,042	4,581	4,932	5,946	5,334	4,749	5,038	5,149	5,166	4,698	4,480
24	4,902	4,853	4,483	4,915	5,794	5,227	5,067	5,331	5,494	4,249	4,042	4,209
25	4,931	4,711	4,665	4,473	5,623	5,689	5,815	4,860	5,494	5,022	4,691	3,967
26	5,032	5,190	4,633	5,085	4,900	6,204	5,606	4,986	4,982	4,299	4,629	3,958
27	4,990	5,157	5,012	4,547	4,929	5,687	5,683	5,196	5,199	4,300	4,890	4,580
28	4,948	4,791	4,568	4,237	5,063	5,658	4,736	5,690	4,814	4,593	4,296	4,116
29	4,906		4,890	5,191	6,109	5,339	5,648	5,263	4,447	4,904	4,725	4,093
30	4,850		5,130	4,711	5,527	4,800	6,205	4,901	5,307	4,608	4,205	4,570
31	4,890		4,288		4,977		5,637	5,228		5,125		3,922
Total	150,173	139,112	147,996	139,707	159,154	159,548	160,949	171,626	153,994	151,399	137,584	138,446
Average	4,844	4,968	4,774	4,657	5,134	5,318	5,192	5,536	5,133	4,884	4,586	4,466
Min	4,447	4,532	4,288	4,176	4,447	4,592	4,206	4,836	4,259	3,898	4,042	3,922
Max	5,127	5,675	5,153	5,191	6,109	6,204	6,205	6,513	5,730	6,126	5,095	5,033
				Yearly Average		4,958						
				Yearly Min		3,898						
				Yearly Max		6,513						

### Conclusion

This report is available at the Arnprior Town Hall front desk, and will be advertised on the bulletin board at the Town Hall as well as the Town's web site. This report will also be presented to council for adoption, and forwarded to the Ontario Ministry of the Environment.

For inquiries regarding this report, please contact Mike Trumble at 623-4231 Ext. 246.

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