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March 16, 2009

Town of Laurentian Hills
34465 Highway 17, RR #1
Deep River, Ontario
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**Attn.: Mr. Wayne Kirby, AMCT
CAO-Clerk**

**Re: Town of Laurentian Hills
Chalk River Wastewater Systems**

Please find enclosed the Town of Laurentian Hills, Wastewater Treatment Facility Annual Operations Report 2008. The report is prepared in accordance with the requirements of the Certificate of Approval # 3-0210-87-896 annual report criteria and contains the following:

1. Operating Parameters and Effluent Concentration and Loading;
2. Analytical protocol;
3. Proposed Programs or Remedial Measures;
4. Wastewater Sludge; and,
5. Maintenance and Calibration.

On behalf of the municipality, we have submitted a copy of the wastewater annual report to the MOE, Ottawa District Office, 2430 Don Reid Dr., Ottawa, Ontario K1H 1E1, Attn: Mr. Bryan Dickman.

Yours truly,
American Water Canada Corp.

Jeff Trudeau, P.Eng.
Projects Director

c: D. Ethier, AW Canada
MOE, Ottawa District Office

1. OPERATING PARAMETERS AND EFFLUENT CONCENTRATION AND LOADING;

A summary of the average daily flow, the average daily influent and effluent concentration for the parameters of Biochemical Oxygen Demand, Suspended Solids, Total Phosphorus and E. coli has been summarized in the Annual Status Report for Wastewater Treatment 2008 (attached).

The average influent flow to the plant was 0.472 ML/d for 2008, which approaches the plant design capacity of 0.545 ML/d for the contact stabilization mode of operation. A daily maximum flow of 850m³ was obtained in June. Figure 1 shows the raw sewage flows to the plant in 2008.

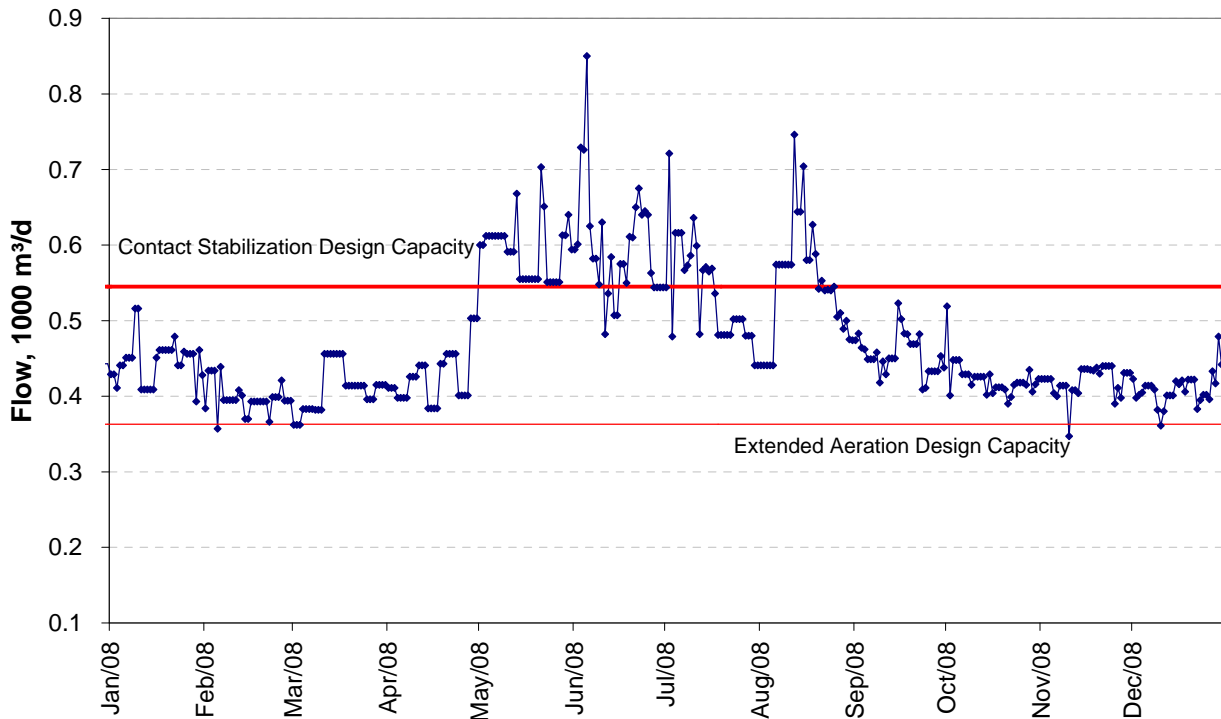


Figure 1: Daily Flows at the Chalk River Sewage Plant

Average flow for 2008 was 0.472 ML/d. In 2007, the average flow was 0.458 ML/d. This represents a 3% increase from 2007. However, throughout much of the summer months, the system was receiving flows higher than the rated contact stabilization design capacity. Some of this was due to a wetter-than-usual summer season.

As has been stated in prior annual reports, the Town of Laurentian Hills should continue with the infiltration study of the collection system and water management activities within the Black Duck Creek watershed. This recommendation was put forth in the 2006 annual report due to a substantial increase in flows from 2005.

The sewage system is operating close to its approved rated capacity.

In the table below, the annual average effluent concentrations for the BOD5, suspended solids and total phosphorus are compared to the criteria in the certificate of approval. All effluent concentration criteria were achieved during the year.

Effluent Parameter	Actual Effluent Concentration (mg/L)		Criteria Effluent Concentration (mg/L)	Attains Criteria in Cert. of Approval
BOD5	6.0		25 (annual)	Yes
Suspended Solids	10.7		25 (annual)	Yes
Total Phosphorus	Jan	0.34	1 (monthly)	Yes
	Feb	0.53		
	Mar	0.59		
	Apr	0.44		
	May	0.30		
	Jun	0.31		
	Jul	0.60		
	Aug	0.23		
	Sep	0.26		
	Oct	0.31		
	Nov	0.59		
	Dec	0.56		
	AVG	0.42		

The certificate of approval also requires that the loading from the effluent is monitored and maximum limits have been established.

In the table below, the effluent loading for the BOD5, suspended solids and total phosphorus are compared to the requirements in accordance with the certificate of approval based on the plant operating in the contact stabilization mode. All loading criteria were achieved.

Effluent Parameter	Actual Effluent Loading (Kg/day)	Criteria Effluent Loading (Kg/day)	Attains Criteria in Certificate of Approval
CBOD5	2.8	13.6 (annual)	Yes
Suspended Solids	5.1	13.6 (annual)	Yes
Total Phosphorous	0.20	0.5 (annual)	Yes

As presented above the plant effluent quality achieved the requirements as outlined in Certificate of Approval #3-0210-87-896.

The plant was able to achieve removal efficiencies for BOD5, Suspended Solids and Total Phosphorus of 93.8%, 93.9% and 86.9%, respectively.

2. ANALYTICAL PROTOCOL

The influent and effluent samples are 24-hour composite samples taken at the plant inlet after grit removal and the plant discharge after disinfection.

The operator tests weekly for total phosphorus and pH on the influent and effluent samples, weekly for mixed liquor suspended solids and DO from the aeration tank and daily for chlorine residual.

On a bi-weekly basis, the operator sends the influent and effluent samples to accredited environmental testing laboratories. In 2009, samples were sent to Caduceon Environmental Laboratories Ltd., Ottawa for analysis.

Type of Analysis	Influent	Effluent
BOD5	bi-weekly	bi-weekly
Suspended Solids	bi-weekly	bi-weekly
Total Phosphorus	bi-weekly	bi-weekly
TKN, Ammonia	bi-weekly	bi-weekly
Nitrate and Nitrite	bi-weekly	bi-weekly
Total Coliform	bi-weekly	bi-weekly
Fecal Coliform	bi-weekly	bi-weekly

A summary of the lab results can be found attached as a WaterTrax report.

3. PROPOSED PROGRAMS OR REMEDIAL MEASURES

The plant and pump station experienced no raw sewage bypassing during the year.

For the most part, the plant has been within its hydraulics criteria however, there have been some issues with high flows, and during these periods there have been some hydraulics issues. These incidents have furthered the importance of an infiltration study of the sewage collection system. Despite the high flows, the effluent quality is well within its criteria.

The proposed programs listed below focus on system optimization or capital upgrades.

AW Canada has been using an alternative coagulant, Pre-Hydroxylated Aluminum Sulphate (PHAS), to assist with phosphorus removal and to reduce sludge volumes. Chemical addition rates/usage may need to be changed if the flows are higher than usual.

We recommend that the municipality consider the following capital improvements for the 2009-year:

- Investigate additional sludge management options, such as on-site thickening using Geotubes or installation of an sludge storage tank, to reduce sludge haulage/disposal;
- Conversion of heating systems to natural gas;
- Continue with refurbishment of the submersible pumps at both low lift stations;
- Continue high-pressure flushing of collection system
- Replacement of chemical addition pumps (quote for two pumps forthcoming)
- Continue with infiltration study of the sewage collection system
- Study to investigate removal of backwash water from the water treatment plant
- As part of ongoing system maintenance, it is recommended that the aeration basin/clarifier system be drained, inspected and grit/debris removed and repairs made. This activity will require prior approval from the MOE as it will involve a planned bypass of the treatment system. Operations staff will prepare and send a proposed procedure to the MOE prior to this work taking place.

4. WASTEWATER SLUDGE

During 2008, the sludge was land applied in accordance with certificate # S-4131-31 located at Lots 6 & 7 Con XIII (former Township of Wylie). The sludge hauler has a license # H-8700-17 with the MOE. The sludge was analyzed for heavy metals and the results are on file at the treatment plant.

The volume of sludge haulage for the year 2008 is as follows:

Month	Volume, (m ³)	Disposed To	Month	Volume, (m ³)	Disposed To
Jan	0	N/A	Jul	0	N/A
Feb	0	N/A	Aug	164	Land
Mar	0	N/A	Sep	0	N/A
Apr	224	Pembroke	Oct	0	N/A
May	0	N/A	Nov	180	Land
Jun	0	N/A	Dec	0	N/A

The annual summary of sludge hauled from the Chalk River Wastewater Treatment Plant from 1999 through to 2008 is outlined below:

Year	Sludge Volume, m ³	Year	Sludge Volume, m ³
1999	520	2004	608
2000	500	2005	563
2001	507	2006	539
2002	672	2007	386
2003	632	2008	388

It is estimated that the sludge hauled during 2008 will be around 400m³.

5. MAINTENANCE AND CALIBRATION

Annual calibrations were performed on the flow meter in May 2008. A certified technician, Ken Harris, conducted the calibration. Copies of both reports are available at the plant.

The 2008 maintenance activities were recorded in the maintenance management log book at the plant. The work orders are completed on site and kept at the plant. The operator maintains a logbook to record the plant operations and maintenance activities for the treatment facility.

The highlights of the maintenance carried out for 2008 year are outlined below:

- All four sewage lift pumps pulled and cleaned and repaired as necessary;
- Lift stations pumped out and cleaned;
- flow meter and alarm system was inspected and calibrated;
- sewer lines flushed

Chalk River
Wastewater Operations



Year: 2008

Municipality: Laurentian Hills
 Project: Chalk River W.P.C.P.
 Design Cap.: 0.363 ML/d in extended aeration mode
 0.545 ML/d in contact stabilization mode
 Description: -two pumping stations.
 - extended aeration/contact stabilization process

Month	FLOWS			BIOCHEMICAL O2 DEMAND			SUSPENDED SOLIDS			PHOSPHORUS			E coli (geomean)
	Total Flow 1000m3	Avg. Day Flow 1000m3	Max Day Flow 1000m3	Avg. Raw BOD (mg/L)	Avg. Eff. BOD (mg/L)	Avg. Load BOD (kg/day)	Avg. Raw SS (mg/L)	Avg. Eff. SS (mg/L)	Avg. Load SS (kg/day)	Avg. Raw Phos. (mg/L)	Avg. Eff. Phos. (mg/L)	Avg. Load Phos. (kg/day)	
January	13.84	0.446	0.516	117.0	3.0	1.3	218.0	10.1	4.5	3.81	0.34	0.15	0
February	11.53	0.398	0.439	129.0	4.5	1.8	197.0	10.2	4.1	3.43	0.53	0.21	108
March	12.70	0.410	0.456	107.0	6.0	2.5	191.0	12.2	5.0	3.76	0.59	0.24	0
April	12.79	0.426	0.503	102.0	11.5	4.9	186.0	11.3	4.8	2.92	0.44	0.19	0
May	18.38	0.593	0.703	94.0	5.5	3.3	245.0	9.3	5.5	3.14	0.30	0.18	0
June	17.99	0.600	0.850	122.0	9.5	5.7	176.0	14.3	8.6	3.44	0.31	0.19	6491
July	16.58	0.535	0.721	94.0	5.5	2.9	183.0	7.4	4.0	2.63	0.60	0.32	4450
August	16.98	0.548	0.746	106.0	5.5	3.0	149.0	12.8	7.0	3.57	0.23	0.13	0
September	13.65	0.455	0.523	63.0	4.5	2.0	155.0	9.1	4.1	2.72	0.24	0.11	318
October	13.10	0.423	0.519	92.0	4.0	1.7	142.0	11.0	4.7	2.91	0.31	0.13	0
November	12.60	0.420	0.440	56.0	6.5	2.7	131.0	10.2	4.3	3.11	0.59	0.25	150
December	12.73	0.411	0.479	90.0	6.5	2.7	148.0	10.8	4.4	3.12	0.56	0.23	98
AVERAGE	14.41	0.472	0.575	97.7	6.0	2.9	176.8	10.7	5.1	3.2	0.42	0.19	n/a
MAXIMUM	18.38		0.850	129.0	11.5		245.0	14.3		3.8	0.60		
% Removal					93.8%			93.9%			86.9%		
CRITERIA					25.00	13.6		25.00	13.6		1.00	0.5	
MEETS Concentration Criteria					YES	YES		YES	YES		YES	YES	

Remedial Actions:

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Facility: Chalk River WWTP; Chalk River WWTP
Sampling Point: 01 Raw Sewage (1-1-INF, 1236B)

Ammonia (total, as N)

Criteria

01/02/2008 08:00	14.9 mg/L
01/22/2008 08:00	13.8 mg/L
02/05/2008 08:00	15.4 mg/L
02/19/2008 07:25	19.0 mg/L
03/04/2008 08:00	5.28 mg/L
03/18/2008 08:00	17.6 mg/L
04/01/2008 08:00	14.1 mg/L
04/14/2008 08:00	9.42 mg/L
04/29/2008 08:00	9.06 mg/L
05/13/2008 08:00	13.7 mg/L
05/28/2008 06:45	7.61 mg/L
06/10/2008 08:00	14.8 mg/L
06/24/2008 07:00	18.0 mg/L
07/08/2008 07:00	9.27 mg/L
07/22/2008 00:00	20.2 mg/L
08/05/2008 08:00	20.5 mg/L
08/26/2008 07:10	21.2 mg/L
09/23/2008 06:45	10.1 mg/L
10/07/2008 06:48	10.7 mg/L
10/21/2008 06:35	17.5 mg/L
11/04/2008 08:05	19.2 mg/L
11/18/2008 06:30	5.11 mg/L
12/02/2008 07:15	13.1 mg/L
12/16/2008 06:55	12.9 mg/L

samples: 24 **min:** 5.11 mg/L
detects: 24 **max:** 21.2 mg/L
non-detects: 0 **avg:** 13.852 mg/L (based on 24 numerical results)
exceedances: 0

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

BOD-5

Criteria

01/02/2008 08:00	117 mg/L
02/05/2008 08:00	139 mg/L
02/19/2008 07:25	119 mg/L
03/04/2008 08:00	40 mg/L
03/18/2008 08:00	173 mg/L
04/01/2008 08:00	109 mg/L
04/14/2008 08:00	94 mg/L
05/13/2008 08:00	129 mg/L
05/28/2008 06:45	59 mg/L
06/10/2008 08:00	166 mg/L
06/24/2008 07:00	77 mg/L
07/08/2008 07:00	50 mg/L
07/22/2008 00:00	138 mg/L
08/05/2008 08:00	107 mg/L
08/26/2008 07:10	105 mg/L
09/23/2008 06:45	48 mg/L
10/07/2008 06:48	76 mg/L
10/21/2008 06:35	107 mg/L
11/04/2008 08:05	94 mg/L
12/02/2008 07:15	108 mg/L
12/16/2008 06:55	72 mg/L

samples: 21 **min:** 40 mg/L
detects: 21 **max:** 173 mg/L
non-detects: 0 **avg:** 101.286 mg/L (based on 21 numerical results)
exceedances: 0

Nitrate (as N)

Criteria

01/02/2008 08:00	0.4 mg/L
01/22/2008 08:00	0.8 mg/L
02/05/2008 08:00	0.6 mg/L
02/19/2008 07:25	0.3 mg/L
03/04/2008 08:00	7.3 mg/L

Water System List Report

Town of Laurentian Hills

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Chalk River Waste Water

Nitrate (as N)

Criteria

03/18/2008 08:00	0.7 mg/L
04/01/2008 08:00	0.3 mg/L
04/14/2008 08:00	1.4 mg/L
04/29/2008 08:00	1.2 mg/L
05/13/2008 08:00	< 0.1 mg/L
05/28/2008 06:45	0.6 mg/L
06/10/2008 08:00	1.0 mg/L
06/24/2008 07:00	1.2 mg/L
07/08/2008 07:00	0.1 mg/L
07/22/2008 00:00	< 0.1 mg/L
08/26/2008 07:10	0.8 mg/L
09/23/2008 06:45	0.7 mg/L
10/07/2008 06:48	0.6 mg/L
10/21/2008 06:35	0.2 mg/L
11/04/2008 08:05	0.3 mg/L
11/18/2008 06:30	0.8 mg/L
12/02/2008 07:15	0.6 mg/L
12/16/2008 06:55	0.6 mg/L

# samples: 23	min: < 0.1 mg/L
# detects: 21	max: 7.3 mg/L
# non-detects: 2	avg: 0.900 mg/L (based on 23 numerical results)
# exceedances: 0	

Nitrite (as N)

Criteria

01/02/2008 08:00	0.2 mg/L
01/22/2008 08:00	0.2 mg/L
02/05/2008 08:00	0.3 mg/L
02/19/2008 07:25	0.3 mg/L
03/04/2008 08:00	0.2 mg/L
03/18/2008 08:00	0.2 mg/L
04/01/2008 08:00	0.2 mg/L
04/14/2008 08:00	0.2 mg/L

Water System List Report

Town of Laurentian Hills

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Chalk River Waste Water

Nitrite (as N)

Criteria

04/29/2008 08:00	0.3 mg/L
05/13/2008 08:00	< 0.1 mg/L
05/28/2008 06:45	0.2 mg/L
06/10/2008 08:00	0.3 mg/L
06/24/2008 07:00	0.2 mg/L
07/08/2008 07:00	0.1 mg/L
07/22/2008 00:00	< 0.1 mg/L
08/26/2008 07:10	0.2 mg/L
09/23/2008 06:45	0.2 mg/L
10/07/2008 06:48	0.1 mg/L
10/21/2008 06:35	0.3 mg/L
11/04/2008 08:05	0.2 mg/L
11/18/2008 06:30	0.1 mg/L
12/02/2008 07:15	0.2 mg/L
12/16/2008 06:55	0.2 mg/L

samples: 23 **min:** < 0.1 mg/L
detects: 21 **max:** 0.3 mg/L
non-detects: 2 **avg:** 0.200 mg/L (based on 23 numerical results)
exceedances: 0

Phosphorus (total)

Criteria

01/02/2008 08:00	2.59 mg/L
01/08/2008 08:00	5.94 mg/L
01/15/2008 08:00	4.53 mg/L
01/22/2008 08:00	2.36 mg/L
01/29/2008 06:05	3.64 mg/L
02/05/2008 08:00	3.24 mg/L
02/12/2008 08:00	3.00 mg/L
02/19/2008 07:25	4.05 mg/L
02/26/2008 08:00	3.44 mg/L
03/04/2008 08:00	2.78 mg/L
03/11/2008 08:00	3.74 mg/L

Water System List Report

Town of Laurentian Hills

01/01/2008 to 12/31/2008 (mm/dd/yyyy)**Chalk River Waste Water**

Phosphorus (total)	Criteria
03/18/2008 08:00	3.87 mg/L
03/25/2008 08:00	4.65 mg/L
04/01/2008 08:00	3.44 mg/L
04/08/2008 00:00	2.78 mg/L
04/14/2008 08:00	4.82 mg/L
04/22/2008 08:00	3.45 mg/L
04/29/2008 08:00	0.12 mg/L
05/06/2008 08:00	2.34 mg/L
05/13/2008 08:00	4.56 mg/L
05/20/2008 08:00	3.99 mg/L
05/28/2008 06:45	1.66 mg/L
06/03/2008 06:30	1.99 mg/L
06/10/2008 08:00	4.80 mg/L
06/24/2008 07:00	3.54 mg/L
07/02/2008 07:21	1.08 mg/L
07/08/2008 07:00	2.65 mg/L
07/22/2008 00:00	3.96 mg/L
07/29/2008 07:20	2.83 mg/L
08/05/2008 08:00	4.67 mg/L
08/12/2008 06:45	2.70 mg/L
08/19/2008 07:15	2.74 mg/L
08/26/2008 07:10	4.18 mg/L
09/02/2008 00:00	2.64 mg/L
09/16/2008 06:31	4.88 mg/L
09/23/2008 06:45	2.08 mg/L
09/30/2008 09:10	2.43 mg/L
10/07/2008 06:48	2.72 mg/L
10/14/2008 06:45	2.78 mg/L
10/21/2008 06:35	4.23 mg/L
10/28/2008 06:30	1.89 mg/L
11/04/2008 08:05	4.22 mg/L
11/11/2008 07:35	3.54 mg/L
11/18/2008 06:30	2.16 mg/L
11/25/2008 07:00	2.53 mg/L
12/02/2008 07:15	3.13 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Phosphorus (total)

Criteria

12/09/2008 07:10	2.60 mg/L
12/16/2008 06:55	3.67 mg/L
12/22/2008 09:25	3.07 mg/L

# samples: 49	min: 0.12 mg/L
# detects: 49	max: 5.94 mg/L
# non-detects: 0	avg: 3.239 mg/L (based on 49 numerical results)
# exceedances: 0	

Suspended Solids

Criteria

01/02/2008	163 mg/L
01/02/2008 08:00	628 mg/L
01/11/2008	178 mg/L
01/15/2008	178 mg/L
01/16/2008	183 mg/L
01/22/2008 08:00	44 mg/L
01/23/2008	174 mg/L
01/30/2008	198 mg/L
02/05/2008 08:00	460 mg/L
02/06/2008	188 mg/L
02/13/2008	127 mg/L
02/19/2008 07:25	148 mg/L
02/20/2008	142 mg/L
02/27/2008	116 mg/L
03/04/2008 08:00	176 mg/L
03/05/2008	127 mg/L
03/12/2008	163 mg/L
03/18/2008 08:00	344 mg/L
03/19/2008	181 mg/L
03/26/2008	157 mg/L
04/01/2008	163 mg/L
04/01/2008 08:00	372 mg/L
04/09/2008	184 mg/L

Water System List Report

Town of Laurentian Hills

01/01/2008 to 12/31/2008 (mm/dd/yyyy)**Chalk River Waste Water**

Suspended Solids**Criteria**

04/14/2008 08:00	212 mg/L
04/16/2008	127 mg/L
04/23/2008	163 mg/L
04/29/2008 08:00	94 mg/L
04/30/2008	171 mg/L
05/07/2008	163 mg/L
05/13/2008 08:00	608 mg/L
05/14/2008	138 mg/L
05/21/2008	156 mg/L
05/28/2008	163 mg/L
05/28/2008 06:45	244 mg/L
06/04/2008	212 mg/L
06/10/2008 08:00	260 mg/L
06/11/2008	186 mg/L
06/18/2008	146 mg/L
06/24/2008 07:00	86 mg/L
06/25/2008	165 mg/L
07/02/2008	194 mg/L
07/08/2008 07:00	144 mg/L
07/09/2008	186 mg/L
07/16/2008	153 mg/L
07/22/2008 00:00	312 mg/L
07/23/2008	138 mg/L
07/29/2008	154 mg/L
08/06/2008	162 mg/L
08/13/2008	182 mg/L
08/19/2008	107 mg/L
08/26/2008 07:10	152 mg/L
08/27/2008	143 mg/L
09/03/2008	126 mg/L
09/10/2008	162 mg/L
09/16/2008	153 mg/L
09/23/2008 06:45	100 mg/L
09/24/2008	117 mg/L
09/30/2008	181 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Suspended Solids

Criteria

10/01/2008	136 mg/L
10/07/2008	152 mg/L
10/07/2008 06:48	144 mg/L
10/14/2008	148 mg/L
10/21/2008	127 mg/L
10/21/2008 06:35	152 mg/L
10/29/2008	133 mg/L
11/04/2008	131 mg/L
11/04/2008 08:05	164 mg/L
11/12/2008	147 mg/L
11/18/2008 06:30	72 mg/L
11/19/2008	153 mg/L
11/26/2008	116 mg/L
12/02/2008 07:15	148 mg/L
12/03/2008	131 mg/L
12/04/2008	127 mg/L
12/10/2008	140 mg/L
12/11/2008	172 mg/L
12/16/2008	138 mg/L
12/16/2008 06:55	264 mg/L
12/17/2008	134 mg/L
12/23/2008	116 mg/L
12/24/2008	143 mg/L
12/30/2008	122 mg/L
12/31/2008	139 mg/L

# samples: 83	min: 44 mg/L
# detects: 83	max: 628 mg/L
# non-detects: 0	avg: 174.735 mg/L (based on 83 numerical results)
# exceedances: 0	

Total Kjeldahl Nitrogen / TKN

Criteria

01/02/2008 08:00	25.0 mg/L
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Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Total Kjeldahl Nitrogen / TKN

Criteria

01/22/2008 08:00	20.2 mg/L
02/05/2008 08:00	30.3 mg/L
02/19/2008 07:25	36.8 mg/L
03/04/2008 08:00	13.6 mg/L
03/18/2008 08:00	34.0 mg/L
04/01/2008 08:00	28.9 mg/L
04/14/2008 08:00	31.8 mg/L
04/29/2008 08:00	1.09 mg/L
05/13/2008 08:00	32.3 mg/L
05/28/2008 06:45	15.3 mg/L
06/10/2008 08:00	42.8 mg/L
06/24/2008 07:00	23.7 mg/L
07/08/2008 07:00	19.6 mg/L
07/22/2008 00:00	35.4 mg/L
08/26/2008 07:10	36.5 mg/L
09/23/2008 06:45	18.1 mg/L
10/07/2008 06:48	22.4 mg/L
10/21/2008 06:35	34.3 mg/L
11/04/2008 08:05	35.9 mg/L
11/18/2008 06:30	11.5 mg/L
12/02/2008 07:15	27.9 mg/L
12/16/2008 06:55	24.9 mg/L

# samples: 23	min: 1.09 mg/L
# detects: 23	max: 42.8 mg/L
# non-detects: 0	avg: 26.187 mg/L (based on 23 numerical results)
# exceedances: 0	

Facility: Chalk River WWTP; Chalk River WWTP
Sampling Point: 07 Final Effluent (1-7-EFF, 12376)

Ammonia (total, as N)

Criteria

01/02/2008 08:00	0.04 mg/L
01/22/2008 08:00	0.60 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Ammonia (total, as N)

Criteria

02/05/2008 08:00	0.14 mg/L
02/19/2008 07:28	0.08 mg/L
03/04/2008 00:00	0.05 mg/L
03/18/2008 08:00	0.17 mg/L
04/01/2008 08:00	0.23 mg/L
04/14/2008 08:00	0.12 mg/L
04/29/2008 08:00	0.02 mg/L
05/13/2008 08:00	0.26 mg/L
05/28/2008 06:45	1.65 mg/L
06/10/2008 08:00	2.53 mg/L
06/24/2008 07:00	0.18 mg/L
07/08/2008 07:00	0.12 mg/L
07/22/2008 00:00	7.78 mg/L
08/05/2008 08:00	2.20 mg/L
08/26/2008 07:10	1.91 mg/L
09/23/2008 06:45	0.22 mg/L
10/07/2008 06:50	0.06 mg/L
10/21/2008 06:35	0.02 mg/L
11/04/2008 08:00	0.09 mg/L
11/18/2008 06:30	1.92 mg/L
12/02/2008 07:25	1.02 mg/L
12/16/2008 06:55	< 0.01 mg/L

# samples: 24	min: < 0.01 mg/L
# detects: 23	max: 7.78 mg/L
# non-detects: 1	avg: 0.893 mg/L (based on 24 numerical results)
# exceedances: 0	

BOD-5

Criteria

01/02/2008 08:00	3 mg/L
02/05/2008 08:00	6 mg/L
02/19/2008 07:28	< 3 mg/L
03/04/2008 00:00	6 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

BOD-5

Criteria

03/18/2008 08:00	6 mg/L
04/01/2008 08:00	15 mg/L
04/14/2008 08:00	8 mg/L
05/13/2008 08:00	5 mg/L
05/28/2008 06:45	6 mg/L
06/10/2008 08:00	11 mg/L
06/24/2008 07:00	8 mg/L
07/08/2008 07:00	3 mg/L
07/22/2008 00:00	8 mg/L
08/05/2008 08:00	4 mg/L
08/26/2008 07:10	7 mg/L
09/23/2008 06:45	< 3 mg/L
10/07/2008 06:50	5 mg/L
10/21/2008 06:35	< 3 mg/L
11/04/2008 08:00	< 3 mg/L
12/02/2008 07:25	10 mg/L
12/16/2008 06:55	< 3 mg/L

# samples: 21	min: < 3 mg/L
# detects: 16	max: 15 mg/L
# non-detects: 5	avg: 6.000 mg/L (based on 21 numerical results)
# exceedances: 0	

Escherichia coli / E. coli (counts)

Criteria

01/02/2008 08:00	« 10 CFU/100mL
01/22/2008 08:00	« 2 CFU/100mL
02/05/2008 08:00	120 CFU/100mL
02/19/2008 07:28	97 CFU/100mL
03/04/2008 00:00	« 2 CFU/100mL
03/18/2008 08:00	< 1 CFU/100mL
04/01/2008 08:00	« 2 CFU/100mL
04/14/2008 08:00	« 2 CFU/100mL
04/29/2008 08:00	« 2 CFU/100mL

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Escherichia coli / E. coli (counts)	Criteria
05/13/2008 08:00	« 2 CFU/100mL
05/28/2008 06:45	78 CFU/100mL
06/10/2008 08:00	980 CFU/100mL
06/24/2008 07:00	43,000 CFU/100mL
07/08/2008 07:00	3,000 CFU/100mL
07/22/2008 00:00	6,600 CFU/100mL
08/05/2008 08:00	« 2 CFU/100mL
08/26/2008 07:10	6,500 CFU/100mL
09/23/2008 06:45	252 CFU/100mL
10/07/2008 06:50	« 2 CFU/100mL
10/21/2008 06:35	48 CFU/100mL
11/04/2008 08:00	150 CFU/100mL
12/02/2008 07:25	> 400 CFU/100mL
12/16/2008 06:55	24 CFU/100mL

# samples: 23	min: < 1 CFU/100mL
# detects: 22	max: 43,000 CFU/100mL
# non-detects: 1	avg: 4,680.769 CFU/100mL (based on 13 numerical results)
# exceedances: 0	

Nitrate (as N)	Criteria
01/02/2008 08:00	6.3 mg/L
01/22/2008 08:00	13.7 mg/L
02/05/2008 08:00	11.9 mg/L
02/19/2008 07:28	10.3 mg/L
03/04/2008 00:00	13.4 mg/L
03/18/2008 08:00	12.4 mg/L
04/01/2008 08:00	9.6 mg/L
04/14/2008 08:00	6.1 mg/L
04/29/2008 08:00	1.1 mg/L
05/13/2008 08:00	2.3 mg/L
05/28/2008 06:45	1.6 mg/L
06/10/2008 08:00	0.9 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Nitrate (as N)

Criteria

06/24/2008 07:00	1.2 mg/L
07/08/2008 07:00	5.4 mg/L
07/22/2008 00:00	0.3 mg/L
08/26/2008 07:10	2.0 mg/L
09/23/2008 06:45	2.9 mg/L
10/07/2008 06:50	3.5 mg/L
10/21/2008 06:35	1.5 mg/L
11/04/2008 08:00	3.7 mg/L
11/18/2008 06:30	0.1 mg/L
12/02/2008 07:25	0.3 mg/L
12/16/2008 06:55	4.7 mg/L

# samples: 23	min: 0.1 mg/L
# detects: 23	max: 13.7 mg/L
# non-detects: 0	avg: 5.009 mg/L (based on 23 numerical results)
# exceedances: 0	

Nitrite (as N)

Criteria

01/02/2008 08:00	< 0.1 mg/L
01/22/2008 08:00	0.3 mg/L
02/05/2008 08:00	0.2 mg/L
02/19/2008 07:28	< 0.1 mg/L
03/04/2008 00:00	< 0.1 mg/L
03/18/2008 08:00	0.2 mg/L
04/01/2008 08:00	0.2 mg/L
04/14/2008 08:00	0.2 mg/L
04/29/2008 08:00	< 0.1 mg/L
05/13/2008 08:00	0.5 mg/L
05/28/2008 06:45	0.8 mg/L
06/10/2008 08:00	0.4 mg/L
06/24/2008 07:00	0.5 mg/L
07/08/2008 07:00	0.6 mg/L
07/22/2008 00:00	0.4 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Nitrite (as N)

Criteria

08/26/2008 07:10	1.8 mg/L
09/23/2008 06:45	0.2 mg/L
10/07/2008 06:50	< 0.1 mg/L
10/21/2008 06:35	< 0.1 mg/L
11/04/2008 08:00	< 0.1 mg/L
11/18/2008 06:30	< 0.1 mg/L
12/02/2008 07:25	0.1 mg/L
12/16/2008 06:55	< 0.1 mg/L

# samples: 23	min: < 0.1 mg/L
# detects: 14	max: 1.8 mg/L
# non-detects: 9	avg: 0.317 mg/L (based on 23 numerical results)
# exceedances: 0	

Phosphorus (total)

Criteria

01/02/2008 08:00	0.25 mg/L
01/08/2008 08:00	0.19 mg/L
01/15/2008 08:00	0.22 mg/L
01/22/2008 08:00	0.59 mg/L
01/29/2008 06:05	0.47 mg/L
02/05/2008 08:00	0.53 mg/L
02/12/2008 08:00	0.45 mg/L
02/19/2008 07:28	0.39 mg/L
02/26/2008 08:00	0.76 mg/L
03/04/2008 00:00	0.77 mg/L
03/11/2008 08:00	0.48 mg/L
03/18/2008 08:00	0.60 mg/L
03/25/2008 08:00	0.52 mg/L
04/01/2008 08:00	0.76 mg/L
04/08/2008 00:00	0.38 mg/L
04/14/2008 08:00	0.36 mg/L
04/22/2008 08:00	0.36 mg/L
04/29/2008 08:00	0.32 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Phosphorus (total)	Criteria
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05/06/2008 08:00	0.30 mg/L
05/13/2008 08:00	0.36 mg/L
05/20/2008 08:00	0.32 mg/L
05/28/2008 06:45	0.23 mg/L
06/03/2008 06:30	0.16 mg/L
06/10/2008 08:00	0.31 mg/L
06/24/2008 07:00	0.46 mg/L
07/02/2008 07:21	0.75 mg/L
07/08/2008 07:00	0.69 mg/L
07/22/2008 00:00	0.54 mg/L
07/29/2008 07:20	0.40 mg/L
08/05/2008 08:00	0.23 mg/L
08/12/2008 06:45	0.18 mg/L
08/19/2008 07:20	0.26 mg/L
08/26/2008 07:10	0.23 mg/L
09/02/2008 00:00	0.34 mg/L
09/16/2008 06:31	0.16 mg/L
09/23/2008 06:45	0.24 mg/L
09/30/2008 09:10	0.29 mg/L
10/07/2008 06:50	0.13 mg/L
10/14/2008 06:45	0.17 mg/L
10/21/2008 06:35	0.17 mg/L
10/28/2008 06:30	0.78 mg/L
11/04/2008 08:00	0.42 mg/L
11/11/2008 07:35	0.85 mg/L
11/18/2008 06:30	0.33 mg/L
11/25/2008 07:10	0.77 mg/L
12/02/2008 07:25	0.36 mg/L
12/09/2008 07:10	0.98 mg/L
12/16/2008 06:55	0.32 mg/L
12/22/2008 09:25	0.57 mg/L

# samples: 49	min: 0.13 mg/L
# detects: 49	max: 0.98 mg/L

Water System List Report

Town of Laurentian Hills

01/01/2008 to 12/31/2008 (mm/dd/yyyy)**Chalk River Waste Water**

non-detects: 0 avg: 0.422 mg/L (based on 49 numerical results)
exceedances: 0

Suspended Solids**Criteria**

01/02/2008	14 mg/L
01/02/2008 08:00	6 mg/L
01/11/2008	13 mg/L
01/15/2008	11 mg/L
01/16/2008	8 mg/L
01/22/2008 08:00	11 mg/L
01/23/2008	11 mg/L
01/25/2008	11 mg/L
01/28/2008	10 mg/L
01/30/2008	8 mg/L
01/31/2008	8 mg/L
02/01/2008	11.8 mg/L
02/05/2008 08:00	9 mg/L
02/06/2008	11.5 mg/L
02/13/2008	15 mg/L
02/19/2008 07:28	3 mg/L
02/20/2008	11 mg/L
02/27/2008	10 mg/L
03/04/2008 00:00	8 mg/L
03/05/2008	16 mg/L
03/12/2008	12 mg/L
03/18/2008 08:00	11 mg/L
03/19/2008	15 mg/L
03/26/2008	11 mg/L
04/01/2008	16 mg/L
04/01/2008 08:00	17 mg/L
04/09/2008	10 mg/L
04/14/2008 08:00	13 mg/L
04/16/2008	8 mg/L
04/23/2008	12 mg/L
04/29/2008 08:00	6 mg/L

Water System List Report

Town of Laurentian Hills

01/01/2008 to 12/31/2008 (mm/dd/yyyy)**Chalk River Waste Water**

Suspended Solids**Criteria**

04/30/2008	8 mg/L
05/07/2008	8 mg/L
05/13/2008 08:00	8 mg/L
05/14/2008	11 mg/L
05/21/2008	13 mg/L
05/28/2008	8 mg/L
05/28/2008 06:45	8 mg/L
06/04/2008	13 mg/L
06/10/2008 08:00	39 mg/L
06/11/2008	8 mg/L
06/18/2008	11 mg/L
06/24/2008 07:00	3 mg/L
06/25/2008	12 mg/L
07/02/2008	11 mg/L
07/08/2008 07:00	3 mg/L
07/09/2008	8 mg/L
07/16/2008	11 mg/L
07/22/2008 00:00	3 mg/L
07/23/2008	7 mg/L
07/29/2008	9 mg/L
08/06/2008	13 mg/L
08/13/2008	19 mg/L
08/19/2008	12 mg/L
08/26/2008 07:10	7 mg/L
08/27/2008	13 mg/L
09/03/2008	11 mg/L
09/10/2008	8 mg/L
09/16/2008	9 mg/L
09/23/2008 06:45	3 mg/L
09/24/2008	13 mg/L
09/30/2008	16 mg/L
10/01/2008	10 mg/L
10/07/2008	12 mg/L
10/07/2008 06:50	7 mg/L
10/14/2008	10 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Suspended Solids

Criteria

10/21/2008	13 mg/L
10/21/2008 06:35	7 mg/L
10/29/2008	18 mg/L
11/04/2008	11 mg/L
11/04/2008 08:00	8 mg/L
11/12/2008	13 mg/L
11/18/2008 06:30	5 mg/L
11/19/2008	15 mg/L
11/26/2008	9 mg/L
12/02/2008 07:25	5 mg/L
12/03/2008	14 mg/L
12/04/2008	11 mg/L
12/10/2008	17 mg/L
12/11/2008	8 mg/L
12/16/2008	10 mg/L
12/16/2008 06:55	8 mg/L
12/17/2008	13 mg/L
12/23/2008	11 mg/L
12/24/2008	9 mg/L
12/30/2008	13 mg/L
12/31/2008	11 mg/L

# samples: 87	min: 3 mg/L
# detects: 87	max: 39 mg/L
# non-detects: 0	avg: 10.705 mg/L (based on 87 numerical results)
# exceedances: 0	

Total Kjeldahl Nitrogen / TKN

Criteria

01/02/2008 08:00	1.28 mg/L
01/22/2008 08:00	2.50 mg/L
02/05/2008 08:00	1.78 mg/L
02/19/2008 07:28	1.49 mg/L
03/04/2008 00:00	1.83 mg/L

Water System List Report

01/01/2008 to 12/31/2008 (mm/dd/yyyy)

Town of Laurentian Hills

Chalk River Waste Water

Total Kjeldahl Nitrogen / TKN

Criteria

03/18/2008 08:00	2.31 mg/L
04/01/2008 08:00	2.71 mg/L
04/14/2008 08:00	1.33 mg/L
04/29/2008 08:00	0.95 mg/L
05/13/2008 08:00	1.34 mg/L
05/28/2008 06:45	2.29 mg/L
06/10/2008 08:00	3.30 mg/L
06/24/2008 07:00	0.81 mg/L
07/08/2008 07:00	1.11 mg/L
07/22/2008 00:00	8.77 mg/L
08/26/2008 07:10	3.24 mg/L
09/23/2008 06:45	1.32 mg/L
10/07/2008 06:50	0.80 mg/L
10/21/2008 06:35	0.48 mg/L
11/04/2008 08:00	0.72 mg/L
11/18/2008 06:30	2.55 mg/L
12/02/2008 07:25	1.63 mg/L
12/16/2008 06:55	0.93 mg/L

# samples: 23	min: 0.48 mg/L
# detects: 23	max: 8.77 mg/L
# non-detects: 0	avg: 1.977 mg/L (based on 23 numerical results)
# exceedances: 0	

Result Legend:

P=present, A=absent, PR=presumptive, ND=non-detect, U=non-detect, OR=over-range, OG=overgrown, TNTC=too numerous to count, NR=no result, NT=not tested, IG=ignore, ER=external report, SC=see comment

< means less than lower detection limit shown
> means greater than upper detection limit shown
« means detected & less than number shown
» means detected & greater than number shown

* Indicates Criteria is exceeded