

**Report on Water Taking  
by  
Omya Canada Inc.  
from the  
Tay River & Groundwater  
for the  
Calendar Year 2013**

**by**

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Senior Consultant**

**February 17, 2014**

## 1. INTRODUCTION

In the calendar year of 2013, Omya Canada Inc. water takings were approved under the Permit to Take Water 8030-82RPF4, which expires in 2020.

This report was commissioned by Omya Canada Inc. as a result of **condition number 4.2.16** of Permit to Take Water **8030-82RPF4**, which is reproduced below in its entirety.

*The Permit Holder shall engage the services of an appropriately qualified person to prepare an annual report on water taking. This report shall, at a minimum, include an analysis of all data collected in the monitoring program as described by this Permit to evaluate compliance or non-compliance with the terms and conditions of the Permit. The report can further provide recommendations for conservation, protection and wise use and management of the water for this water taking. The report shall be submitted to the Director by January 31 of each year and shall include the monitoring data for the 12-month period ending December 31 of the previous year.*

In addition to data on water taking, data on streamflow is also presented in this report because of **condition number 4.2.11**, which is reproduced below in its entirety.

*The Permit Holder shall immediately cease the taking of water authorized by this Permit if the discharge measured by the hydrometric station, including the staff gauge, is equal to or less than 1 cubic metre per second.*

With respect to streamflow data, **condition number 4.2.18** is relevant to this report. Accordingly, it is reproduced below in its entirety.

*All data collected in accordance with paragraphs 4.2.1, 4.2.2, 4.2.5 and 4.2.6 shall be collected and refined in a manner acceptable for inclusion in Environment Canada's Water Survey (HYDAT) database and shall be submitted, annually, for inclusion in that database.*



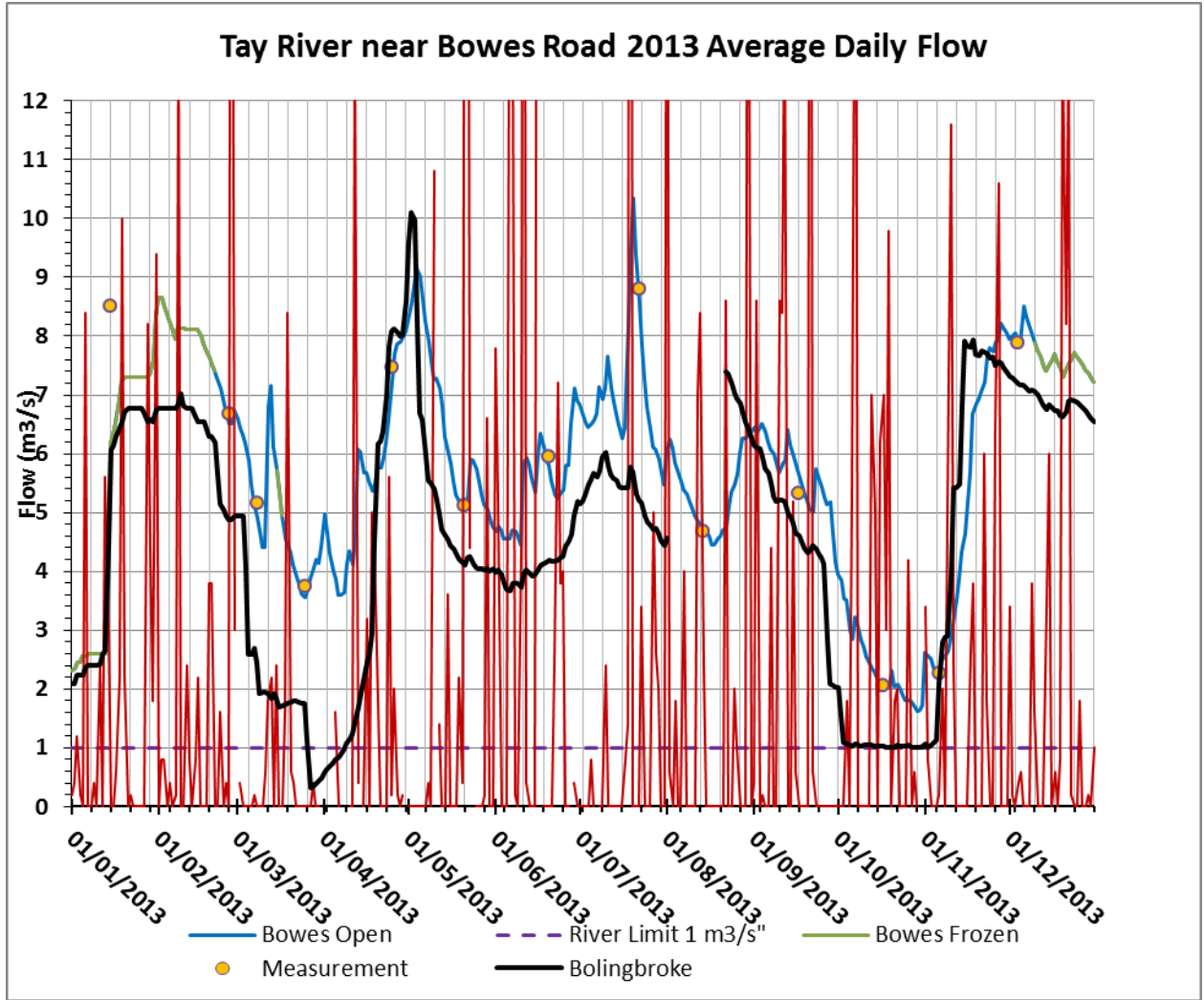


Figure 1. Annual hydrograph (daily) for the Tay River near Bowes Road – 2013

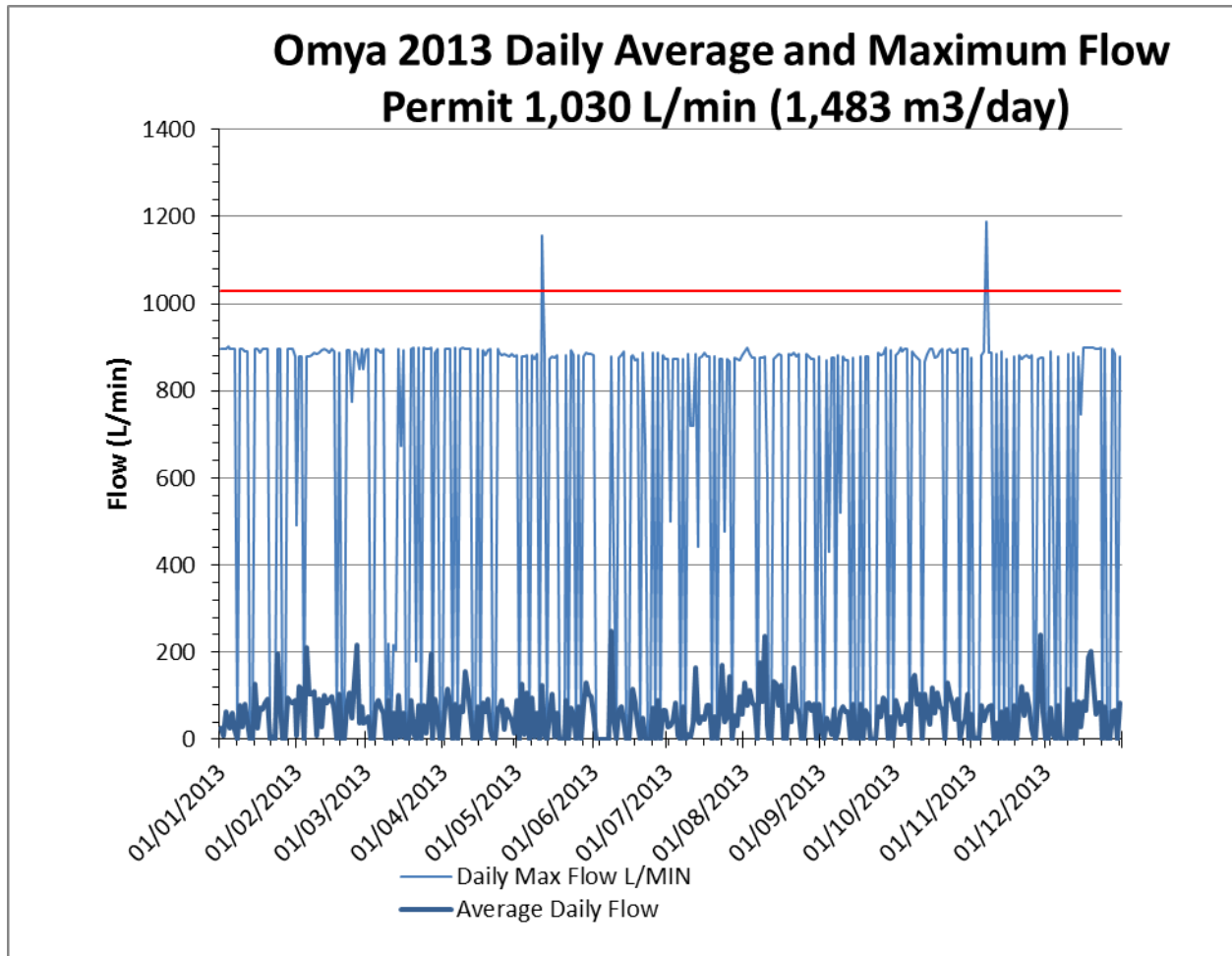
### 3. OMYA WATER TAKING DATA

The Omya intake facility became fully operational and water taking commenced on August 27, 2003. The daily water taking (in m<sup>3</sup>/day) recorded at the Plant, for the period January 1 to December 31, 2013 is presented in Table 2. For convenience, Table 2 is presented in the same format as Table 1.

**Table 2. Omya Plant near Bowes Road – Daily Water Taking for 2013 (in m<sup>3</sup>)**

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	170	0	0	0	0	0	0	0	0	0	0
2	85	170	68	102	0	0	44	102	0	85	0	0
3	68	0	0	170	170	0	58	169	68	51	0	102
4	34	289	0	102	18	0	106	119	34	68	0	0
5	85	153	102	16	164	0	15	102	17	68	102	0
6	34	153	136	102	0	0	11	0	102	119	68	119
7	0	153	102	0	137	0	102	258	0	0	85	0
8	102	17	85	116	0	339	5	132	34	202	102	0
9	34	119	0	85	89	68	0	337	85	204	119	0
10	119	51	136	221	0	15	17	49	102	119	0	170
11	68	136	0	170	176	85	57	0	85	153	51	0
12	0	119	85	96	17	111	221	0	102	0	0	119
13	0	136	8	1	2	51	76	187	0	136	85	0
14	170	136	136	0	76	0	51	187	119	85	0	119
15	51	102	16	102	149	0	68	102	0	51	102	34
16	85	0	85	0	18	129	68	187	0	170	0	119
17	102	153	0	126	85	162	107	2	102	85	0	102
18	119	0	0	85	3	119	120	0	17	153	102	272
19	136	0	119	136	1	34	0	102	85	102	0	289
20	10	102	17	17	0	16	72	61	85	102	102	187
21	0	153	0	15	119	68	0	238	0	0	170	85
22	0	68	119	0	8	2	86	105	0	187	85	119
23	272	187	0	102	104	3	238	76	0	153	153	119
24	119	323	119	85	68	0	68	14	102	119	102	0
25	0	51	17	132	0	102	68	0	68	68	34	102
26	0	102	119	28	119	0	204	102	136	119	0	0
27	136	51	272	115	0	121	0	119	136	0	0	0
28	119	68	0	68	106	0	85	100	0	51	136	102
29	119		136	72	199	102	51	119	68	68	357	85
30	136		85	17	136	95	138	0	0	153	85	0
31	17		0		153		72	119		0		119

Figure 2 gives for 2013 the daily water taking shown in Table 2, but expressed in L/min and the maximum instantaneous taking (in L/min) as well as the maximum permitted instantaneous taking of 1,030 L/min.



**Figure 2. Omya Plant near Bowes Road – Water Taking for 2013 (in L/min)**

The groundwater taking from production wells was zero for 2013.

## **4. ANALYSIS OF DATA COLLECTED**

### **4.1 Data Quality**

#### **4.1.1 Streamflow data**

The streamflow data are accurate and of high quality because of the following facts.

1. The streamflow values under open-water conditions are derived from water level readings at a hydrometric station (herein defined as including the “staff gauge”) that was set up and is operated, monitored and maintained to Water Survey of Canada standards.
2. Omya maintains two back-up water level gauges that can be used in the unlikely event that the gauge at the hydrometric station fails.
3. The rating curve is accurate within the range of open-water, recorded water levels.
4. The streamflow values under ice-condition water levels have been calculated according to Water Survey of Canada standards.

#### **4.1.2 Water taking data**

The water taking data are accurate and of high quality because a) they have been determined from readings of a flow meter and totalizer, the calibration of which has been guaranteed by the manufacturer, and b) the flow meters are checked annually to ensure continued accuracy.

### **4.2 Cut-off Condition**

As shown in Table 1 and Figure 2, the **daily** streamflow was not less than the cut-off flow of 1.0 m<sup>3</sup>/s from January 1 to December 31, 2013. Accordingly, Omya was in compliance with respect to **condition number 4.2.11** for the entire calendar year 2013.

### **4.3 Inclusion in Hydat Database**

All data collected in accordance with paragraphs 17, 19 and 20 of the Permit have been collected and refined in a manner acceptable for inclusion in Environment Canada’s Water Survey (Hydat) database. The data for 2013 will be submitted to Environment Canada, in accordance with that agency’s protocol and schedule, for inclusion in the Hydat database.

#### 4.4 Maximum Permitted Daily Taking (L/day)

1. The **daily** water taking from the river did not exceed the permitted value (1,483 m<sup>3</sup>/day) in 2013.
2. The groundwater taking was zero for 2013.

#### 4.5 Maximum Permitted Instantaneous Taking (L/min)

I have reviewed the record of **instantaneous** water taking for production and can report that it did not exceed a value of 1,030 litres per minute (which is equal to 1,483,000 L/day). Hence, Omya was in compliance with respect to the maximum permitted water taking for the calendar year 2013. Omya did withdraw at a rate exceeding 1,030 L/min on two occasions in 2013, on May 6 and November 10, for hydrant testing. These brief withdrawals did not cause interference with downstream uses of water or with the natural function of the stream as per **general condition 5.2**.



## 5. SUMMARY

**Condition number 4.2.16** of Permit to Take Water Number 8030-82RPF4 specifies that, “This report shall, at a minimum, include an analysis of all data collected in the monitoring program as described by this Permit to evaluate compliance or non-compliance with the terms and conditions of the Permit”.

I certify that I have conducted such analyses and find the following.

1. The data are accurate.
2. During the calendar year 2013, the streamflow did not fall below the cut-off value of 1.0 m<sup>3</sup>/s.
3. At no time during the period of water taking in the calendar year 2013 did the rates of (i) surface water taking exceed 1,483,000 L/day or (ii) groundwater taking exceed 875,534 L/day.

Accordingly, Omya Canada Inc. was in compliance with the terms and conditions of the Permit for the calendar year 2013.

Signed by W E Watt (W. Edgar Watt)

at Kingston, Ontario on February 17, 2014