Application for Amendment to MOE Permit to Take Water (PTTW) 8737-7FZNB4 West Carleton Environmental Centre (WCEC)

July 2014



Prepared for: Waste Management of Canada Corporation 2301 Carp Road Carp, Ontario K0A 1L0



Prepared by: WSP Canada Inc. 1450 1<sup>st</sup> Avenue West, Suite 101 Owen Sound, Ontario N4K 6W2

Project No. 131-19416-00



131-19416-00

July 15, 2014

Mr. Reid Cleland Director of Operations - Ontario Landfills Waste Management of Canada Corporation 2301 Carp Road OTTAWA, ON K0A 1L0

Re: Waste Management of Canada Corporation Application for Amendment to MOE Permit to Take Water 8737-7F2NB4

Dear Sir:

We are pleased to provide the above noted Report/Application for the West Carleton Environmental Centre (WCEC). This Report/Application is associated with the proposed new landfill footprint at the WCEC.

We trust you will find all of the above and attached satisfactory.

Yours truly,

WSP Canada Inc.

Norman A. Bell, P.Geo. Senior Hydrogeologist NAB/dlw Encl.



WSP Canada Inc. 1450 1<sup>st</sup> Ave. W. Suite 101 Owen Sound, ON N4K 6W2

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- Appendix C Schedule 1 Implementation of Water Conservation in Accordance with Best Management Practices and Standards for the Relevant Sector
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- Appendix E Appendix 8-C (Development and Operations Report (D&O) West Carleton Environmental Centre, WSP, July 2014)

# 1. Background

Waste Management of Canada Corporation (WM), having completed an Environmental Assessment (EA), is seeking approval of a new landfill footprint at the West Carlton Environmental Centre (WCEC). The new landfill footprint is on the northerly part of the property immediately north of the existing landfill.

The WCEC is located on Parts of Lots 2, 3 and 4, Concession 2 and parts of Lots 3, 4 and 5, Concession 3, in the former Township of Huntley, formerly in the Township of West Carleton, now the City of Ottawa, near Carp Road and Highway 417. The existing landfill footprint is bordered by the City of Ottawa Road 5 (Carp Road) on the east, Highway 417 on the south, William Mooney Road to the west and private lands south of Richardson Sideroad. Those lands between Richardson Sideroad and 300 m southerly, between William Mooney Road and Carp Road, are owned by WM, but are not designated as part of the site. The Contaminant Attenuation Zone (CAZ) part of the site consists of two (2) land parcels, one large parcel north of Highway 417 and the second small parcel south of Highway 417.

The existing landfill footprint occupies approximately 34 hectares (ha) and the expansion area is 37.8 ha. **Figure 1-1** shows these lands and various facilities within the existing and proposed landfill site.

The existing closed landfill is operated under Amended Certificate of Approval (C of A) A461002.

Leachate contaminated groundwater from the existing site and Closed South Cell flows easterly and is intercepted by eleven (11) purge wells, namely PW1 through PW10 inclusive and PW20. Subsequently, this liquid is pumped to the City of Ottawa's sanitary sewer system for treatment.

The site has an MOE Permit To Take Water (PTTW) 8737-7FZNB4, issued June 14, 2008, which expires July 1, 2018. The PTTW lists fourteen (14) water sources including the purge wells (Sources 1 through 11) and three (3) surface water pond sources (Source 12, 13 and 14). **Table 1**, as prepared from MOE supplied data, includes the PTTW details for each of the sites sources.

Within this application, two (2) new stormwater ponds (referred to as "Stormwater Pond #1" and "Stormwater Pond #2" in the D&O and this report and as Source 15 and 16 within the attached PTTW application), associated with the landfill expansion, are proposed as additional water taking sources.

WM is also seeking approval of two (2) additional water sources:

a) Construction Dewatering (CD) of surface water accumulating, ponding and interfering with construction on soils being prepared and/or adjacent to liner construction;



<b></b>									T	T				T		1						
Source #	PERMITNO	CLIENTNAME	PURPOSECAT	SPURPOSE	EXPIRYDATE ISSUEDDATE	RENEWDATE WN	P_LOT	P_CON	P_MUNICIP	P_UPPERT	P_LOWERT	SURFGRND	SOURCEID	EASTING	NORTHING	UTMZONE	MAXL_DAY	DAYS_YEAR	HRS_DAYMAX	L_MINUTE	ACTIVE	
		Waste Management of		Other -		OldCT not	t					Surface and										
	1 8737-7FZNB4	Canada Corporation	Remediation	Remediation	01/07/2018 14/07/2008	entered	3&4	Ш	Ottawa	NA		Ground Water	· PW1	346816	5016409	18	327310	365.0	24	227	' Yes	45.28447868300 -76.953275
	20727 7F7ND4	Waste Management of	Domodiation	Other -	01/07/2019 14/07/2009	OldCT not	1 2 9. 4		Ottown			Surface and		246972	F016242	10	272760	265.0	24	100	Vac	45 20200725600 76 052520
	2 8737-7FZINB4		Remediation	Remediation	01/07/2018 14/07/2008		5 & 4		Ollawa	NA			PVVZ	340873	5010343	<u> </u>	2/2/60	305.0	24	189	res	45.28389735000 -70.952528
		Waste Management of		Other -		OldCT not	t					Surface and										
	3 8737-7FZNB4	Canada Corporation	Remediation	Remediation	01/07/2018 14/07/2008	entered	3&4	Ш	Ottawa	NA	Ottawa	Ground Water	· PW3	346926	5016274	18	81830	365.0	24	57	' Yes	45.28328816400 -76.951831
	1 9727 7E7NID4	Waste Management of	Pomodiation	Other - Remediation	01/07/2019 14/07/2009	OldCI not	28.1		Ottowa	ΝΑ	Ottowo	Surface and		246004	5016212	10	100100	265.0	24	76	Voc	45 29275420200 76 050046
	4 8737-7FZINB4		Remediation	Remediation		entereu	304		Ottawa	INA	Ollawa		F VV4	540994	3010213	10	109100	/ 303.0	24	70	165	43.28273420300 -70.330340
		Waste Management of		Other -		OldCT not	t					Surface and										
	5 8737-7FZNB4	Canada Corporation	Remediation	Remediation	01/07/2018 14/07/2008	entered	3&4	III	Ottawa	NA	Ottawa	Ground Water	· PW5	347050	5016151	. 18	81830	365.0	24	57	' Yes	45.28220862700 -76.950213
	6 8737-757NR4	Waste Management of	Remediation	Other - Remediation	01/07/2018 14/07/2009		138.1		Ottowo	ΝΑ	Ottawa	Surface and	DW6	247004	5016007	19	126280	365.0	24	05	Vos	45 28172240500 -76 040626
	08737-7121184		Remediation	Remediation		entereu	504		Ottawa	NA .	Ollawa			547054	3010097	10	130380	/ 303.0	24	55	165	43.28173240300 -70.949030
		Waste Management of		Other -		OldCT not	t					Surface and										
	7 8737-7FZNB4	Canada Corporation	Remediation	Remediation	01/07/2018 14/07/2008	entered	3&4	III	Ottawa	NA	Ottawa	Ground Water	· PW7	347136	5016045	5 18	136380	365.0	24	95	Yes	45.28127373800 -76.949084
		Masta Managamant of		Other		OldCT not						Currence and										
	8 8737-7F7NB4	Canada Corporation	Remediation	Remediation	01/07/2018 14/07/2008	entered	3 & 4		Ottawa	ΝΔ	Ottawa	Ground Water	· PW/8	347177	5015992	18	136380	365.0	24	95	Yes	45 28080585300 -76 948546
							5 0 1							517177	5015552		150500	505.0	21		105	
		Waste Management of		Other -		OldCT not	t					Surface and										
	9 8737-7FZNB4	Canada Corporation	Remediation	Remediation	01/07/2018 14/07/2008	entered	3&4		Ottawa	NA	Ottawa	Ground Water	· PW9	347220	5015933	18	354590	365.0	24	246	Yes	45.28028442400 -76.947980
		Waste Management of		Other -		OldCT not						Surface and										
1	0 8737-7FZNB4	Canada Corporation	Remediation	Remediation	01/07/2018 14/07/2008	entered	3&4		Ottawa	NA		Ground Water	- PW10	347262	5015884	18	190930	365.0	24	133	Yes	45.27985273600 -76.947429
																_						
		Waste Management of		Other -		OldCT not	t					Surface and										
1	1 8737-7FZNB4	Canada Corporation	Remediation	Remediation	01/07/2018 14/07/2008	entered	3&4		Ottawa	NA	Ottawa	Ground Water	· PW20	346734	5016385	5 18	218210	365.0	24	152	Yes	45.28424489100 -76.954312
		Waste Management of		Other -		OldCT not	+					Surface and										
1	2 8737-7FZNB4	Canada Corporation	Miscellaneous	Miscellaneous	01/07/2018 14/07/2008	entered	3 & 4	ш	Ottawa	NA	Ottawa	Ground Water	Pond	347054	5015739	18	25000	150.0	10	42	Yes	45.27850303800 -76.950035
		· · · · ·					1															
		Waste Management of		Other -		OldCT not	t					Surface and										
	3 8737-7FZNB4	Canada Corporation	Miscellaneous	Miscellaneous	01/07/2018 14/07/2008	entered	3&4		Ottawa	NA	Ottawa	Ground Water	Pond	347054	5015739	18	350000	200.0	10	583	Yes	45.27850303800 -76.950035
		Waste Management of		Other -		OldCT not	t					Surface and										
1	4 8737-7FZNB4	Canada Corporation	Miscellaneous	Miscellaneous	01/07/2018 14/07/2008	entered	3 & 4	ш	Ottawa	NA	Ottawa	Ground Water	Pond	347054	5015739	18	75000	365.0	24	52	Yes	45.27850303800 -76.950035

Source:

-PTTW database (Excel .xls format) from the MOE's website (https://d2khazk8e83rdv.cloudfront.net/moe\_mapping/downloads/2Water/PermitsToTakeWater.xls). -https://www.ontario.ca/environment-and-energy/permit-take-water Notes:

-'Source #' is as noted on the hardcopy PTTW 8737-7FZNB4.

# Table 1 Permit To Take Water - Existing Waste Management of Canada Corporation



b) The secondary drainage layer (SDL), which is located beneath the primary clay and HDPE liner, will collect dehydration water from the primary clay liner. During landfill construction (connection to previously constructed base system), surface water may enter the SDL system. Under such conditions, water within the SDL is expected to be representative of surface water quality and should be suitable for temporary discharge to stormwater ditch/pond.

The following information is presented in support of the Application Form to amend the aforementioned PTTW to add the four (4) new sources; two (2) new stormwater ponds (designated "Stormwater Pond #1" and "Stormwater Pond #2" or Source 15 and 16, respectively, on **Table 2** and in the attached PTTW application) and two (2) additional sources designated CD and SDL in the PTTW or Source 17 and 18 on **Table 2** respectively.

All of the fourteen (14) existing PTTW sources (**Table 1**) are to be retained and remain unchanged.

Source #	PERMITNO	CLIENTNAME	PURPOSECAT	SPURPOSE	EXPIRYDATE	ISSUEDDATE	RENEWDATE	OLDCTYTWN	P_LOT	P_CON	P_MUNICIP	P_UPPERT	P_LOWER	T SURFGRND	SOURCEID	Use	COORDINATES	S											C00	RDINATES
																	UTM			МТМ									Corrected	
																	EASTING	IORTHING	UTM ZONE	EASTING	NORTHING	MTM ZON			DAYS_YEAR	HRS_DAYMAX	L_MINUTE	ACTIVE	LATITUDE	LONGITUDE
								Township of																						
								Huntley																						
								(formerly in the						Surface and																
		Waste Management of Canada		Other -				Township of						Ground	Stormwater															
15	8737-7FZNB4	Corporation	Miscellaneous	Miscellaneous				West Carleton)	3&4	ш	Ottawa	NA	Ottawa	Water	Pond #1		424024	5014914	18	346474	4 501609	9	9	62500	240		6 240	0	45.283619	-75.968768
								Township of																						
								Huntley																						
								(formerly in the						Surface and																
		Waste Management of Canada		Other -				Township of						Ground	Stormwater															
16	8737-7FZNB4	Corporation	Miscellaneous	Miscellaneous				West Carleton)	3&4	III	Ottawa	NA	Ottawa	Water	Pond #2		423728	5015206	18	346174	4 501638	7	9	105000	240		6 240	0	45.286220	-75.972577
								Township of																						
								Huntlev																						
								(formerly in the						Surface and																
		Waste Management of Canada		Other -				Township of						Ground																
17	8737-7FZNB4	Corporation	Miscellaneous	Miscellaneous				West Carleton)	3&4	liii	Ottawa	NA	Ottawa	Water	CD		423591	5014953	18	346042	1 501613	1	9	3456000	365		4 240	0	45.285880	-75.972949
								Township of																				-		
								Huntley																						
								, (formerly in the						Surface and																
		Waste Management of Canada		Other -				Township of						Ground																
18	8737-7FZNB4	Corporation	Miscellaneous	Miscellaneous				West Carleton)	3 & 4	ш	Ottawa	NA	Ottawa	Water	SDL		423699	5015169	18	346145	5 501634	9	9	1296000	365		4 90	D	45.283922	-75.974293

=- indicated proposed source for water taking.

Notes:

-'Source #' is as noted on the hardcopy PTTW 8737-7FZNB4.

Table 2Amended Permit To Take Water - Proposed PondsWaste Management of Canada Corporation

# 2. Water Taking Sources

There are fourteen (14) existing water taking sources. No changes are proposed.

There are four (4) new water taking sources. The first two (2) sources are the two (2) new stormwater ponds (Stormwater Pond #1 and Stormwater Pond #2) for the new landfill footprint of the WCEC.

The stormwater ponds, while designed and serving a vital purpose within the control and management of the site stormwater, are also a readily available source of water for:

- On-site dust suppression and control;
- Soil conditioning hydration and control of moisture of imported soils to be used for the clay liner and other fills during site preparation and regular operations;
- Irrigation of landscaping features and poplar plantation;
- Temporary storage within ponds, pits and tanks;
- Used to blend with leachate for irrigation purposes;
- Disposal to an approved off-site waste water treatment facility; and
- Moisture conditioning for incoming dry waste placement.

The third and fourth sources are referred to as the Construction Dewatering (CD) and the Secondary Drainage Layer (SDL) water. As landfill liner construction is phased over several years, the dewatering locations for CD move and are non-stationary. The SDL water withdrawal point pumping station (PS6) is fixed. The uses for these two (2) sources are all of the above plus discharge to surface water network.

Appendix 8-C of the D&O report provides operational guidance in relation to the above sources and is included in **Appendix E**.

# 2.1 Location of Water Takings

# 2.1.1 Existing Sources

There are currently three (3) existing pond sources in the PTTW which are numbered as Source 12, 13 and 14 and all listed as "Pond Dugout". All three (3) locations have identical coordinates and refer to the same location. These water sources are shown on **Figure 1-1** and are described as follows:

• Forebay of existing Stormwater Management Facility SWMF #2;

- Aft-bay of existing Stormwater Management Facility SWMF #2. It is noted that the forebay is interconnected with aft-bay through two (2) large culverts;
- Water impoundment in Depression #1. It is noted that SWMF#2 can overflow into Depression #1 but is not hydraulically connected below overflow level.

The three (3) existing pond sources are to remain unchanged for the rates and times noted but we note that the coordinates listed on the PTTW reference MTM (Modified Transverse Mercator) Zone 9, in accordance with the convention used by Ottawa's geoOttawa website, and not UTM (Universal Transverse Mercator) Zone 18 as required by the MOE PTTW application.

Use of the MTM Zone 9 coordinates provided on the hardcopy PTTW issued July 14, 2004 results in the pond sources being located at different geographic coordinates (latitude and longitude) and thus the PTTW database (Excel .xls format) geographic coordinates listed on the MOE's website should be viewed with caution.

 Table 2 details both UTM and MTM coordinates and provides revised geographic coordinates (latitude and longitude) of the existing and proposed sources.

# 2.1.2 Proposed Sources

# New Stormwater Ponds

The two (2) new stormwater ponds (Stormwater Pond #1 and Stormwater Pond #2) are located in the northeastern corner of the property as shown on **Figure 4-2**.

Stormwater Pond #1, located in Depression #4 (a rehabilitated pit), is 184 m long x 51 m wide (150 m x 26 m bottom) and Stormwater Pond #2, located in Depression #5, is 228 m long x 62 m wide (200 m x 32 m bottom) each with a single 4:1 sloped forebay. Stormwater Pond dimensions are shown on **Figure 8-3**.

Stormwater Pond #1 and Stormwater Pond #2 have a normal depth of 0.6 m and forebays which are 0.5 m deeper. The ponds have permanent water pool volumes of 2,598 and 4,200 m<sup>3</sup> respectively.

The water taking on-site grid coordinates corresponding to the western side of Stormwater Pond #1 are 0+900N, 0+320W and the southern side of Stormwater Pond #2 are 1+320N, 0+350W. UTM and MTM coordinates are outlined in **Table 2**.





# STORMWATER POND SCHEMATIC SCALE: NTS

POND #	1	2				
BOTTOM ELEVATION (m)	124.00	122.80				
TOP OF BERM ELEVATION (m)	VARIES 126.75 — 129.00	VARIES 126.30 – 126.80				
OUTLET PIPE NOMINAL Ø (mm)	300	350				
OUTLET INVERT UPSTREAM (m)	124.60	123.40				
OUTLET INVERT DOWNSTREAM (m)	124.50	123.30				
OVERFLOW SPILLWAY ELEVATION (m)	125.85	125.40				
OVERFLOW SPILLWAY BOTTOM WIDTH (m)	3.0	6.0				
a (m)	150	200				
A (m)	184	228				
b (m)	26	32				
B (m)	51	62				

#### NOTE :

ACTUAL INLET/OUTLET CONFIGURATION MAY VARY FROM THIS SHOWN HEREIN.

DWN BY: T C G CHK BY: P S B

DWN BY: T C G DATE: JULY 2014 CHK BY: P S B SCALE: NTS	STORMWATER POND			
WASTE MANAGEMENT OF CANADA CORP.	SCHEMATIC			
DRAWING NO. 131-19416-00 - 8-3	WEST CARLETON ENVIRONMENTAL CENTRE			





# SDL/CD

There is one proposed water taking point for the dewatering of the SDL at the landfill site. PS6 corresponds to the secondary drainage layer pumping station and will remain stationary. PS6 is located at approximately 1+315N, 0+380W.

As noted previously, the location of CD moves and will vary with time and where construction is taking place. Thus, the suggested coordinates for use in the amended PTTW is the center of the expansion landfill (1+080N, 0+770W). UTM and MTM coordinates are presented in **Table 2**.

#### Coordinates

**Table 2** shows the equivalent MTM datum coordinates for ease of reference within the geoOttawa database. The four (4) new source locations are noted as Source 15 to 18 on **Table 2**. The coordinates for each source reference the UTM datum as required by the MOE PTTW application.

The amended PTTW should include a revision of the geographic coordinates of each of the pond sources as noted on **Table 2**. Additionally, the former Township of Huntley (formerly in the Township of West Carleton) should be noted in the OLDCTYTWN column.

# 2.2 Water Taking Method

# Stormwater Ponds

Water taking from the two (2) stormwater ponds will be via water trucks (variable size tankers) using portable pumps.

The following operational controls, as detailed in the D&O report (WSP, 2014), are in place.

Under normal conditions, isolation valves on the outlet piping from stormwater ponds will be open allowing water to drain by gravity into infiltration basins. These valves will be closed if contamination is suspected including the valve controlling drainage from the mini-transfer drop-off area.

Stormwater will flow into the ponds, deposit the coarse fraction of sediment in the forebay and settle smaller particles in the aft-bay section of the stormwater ponds before water is released into the infiltration basin.

In day-to-day operation, staff will visually monitor all stormwater ponds. Should contamination be suspected, testing of the stormwater pond's contents will be carried out by hand-held, on-site instrumentation to measure conductivity, pH and visual aesthetic conditions. Conditions present on site that might indicate the necessity to monitor the pond's contents could include the following:

- visible leachate seep to surface water flowing to one of the surface water ponds;
- evidence of dark stained water;
- oil or any other substance in amounts sufficient to create a visible film, sheen or foam on the receiving waters; or
- accumulation of floating or settleable solids.

Refer to Appendix 8-C for decision-making criteria related to regular and emergency operation of stormwater ponds. Stormwater quality criteria for field and laboratory sampling are also outlined in the same appendix.

The isolation valve on the outlet piping would be closed and remain closed when the pond's water quality is in question. A sample taken for further analysis would be placed in a "rush" category for reporting by an independent laboratory. If the stormwater does not satisfy the trigger concentrations then the stormwater contingency plan will be initiated. Refer to Appendix 8-C for a list of contingency corrective actions.

The isolation valve controlling the MTA shall be closed immediately after spill detection and remain closed until satisfactory clean-up is completed and the area suitable for normal operations.

Depending on the type and severity of contamination, it may be desirable to remove accumulated sediment from the forebay and/or aft bay of the stormwater pond.

These procedures will allow control of surface water discharging into infiltration basins. Under normal conditions, surface water draining into infiltration facilities shall be deemed suitable for groundwater recharge.

# SDL/CD

As presented earlier, water from the SDL will be retrieved from a stationary pumping station (PS6), and CD water from a moveable water taking point (CD) for the purpose of dewatering liner/excavations during new cell construction activities. Both stationary and moveable water taking points will use pumping mechanisms to retrieve the water.

# 2.3 Water Taking Schedule

The base preparation work for landfill expansion will occur between the months of April and November (240 days) comprising the construction season. Landfilling is to be year-round.

Watering is required for dust control of on-site roads throughout the site life. Watering will be required up to 240 days per year, for up to 16 hours/day.

Dewatering of the CD and SDL will generally coincide with the construction season between the months of April and November (240 days). As with the stormwater ponds, withdrawals will be on an as-needed basis but will also coincide with rainfall events. CD and SDL withdrawals may be occasionally outside of the construction season such as when snow melt removal is required. For this reason, a PTTW permit for these sources is sought for 365 days/year for up to 24 hours/day. The requested water taking durations are summarizes in **Table 2**.

# 2.4 Water Taking Amounts

As noted in Section 1.2, water trucks or tankers (variable size) will draw from the stormwater ponds using portable pumps or by vacuum. Based on a sustainable water taking equal to approximately 5% of the pond Permanent Water Pool Volume (PWPV) which is 2,598 m<sup>3</sup> for Pond #1 and 4,200 m<sup>3</sup> for Pond #2, a maximum daily water taking of 130 m<sup>3</sup>/day and 210 m<sup>3</sup>/day respectively is proposed. A maximum pumping rate of 40 L/s is proposed for each pond. A combined total of 340 m<sup>3</sup>/day may be taken from the two (2) new stormwater ponds.

Pumping from the CD and SDL will be variable and the volume dependent upon the size of the excavation/liner area being constructed or exposed at any particular time. Anticipating a 100 mm rainfall over an empty lined cell floor of 6.16 ha (137 m x 450 m), which would be the worst case scenario, up to 6,160 m<sup>3</sup> of stormwater may accumulate within the construction area or the SDL. The SDL layer has relatively large water storage capacity equal to approximately 45,000 m<sup>3</sup> for the entire landfill footprint

based on porosity of 0.4. It would take almost five (5) days of continuous pumping to remove 6,160 m<sup>3</sup> of liquid at a pumping rate of 15 L/s (SDL) or approximately 43 hours at a pumping rate of 40 L/s (CD).

The requested rates for the amended PTTW are shown in **Table 2**.

# 3. Water Management

There are several options for management of water that is pumped from the new stormwater ponds at the landfill site. Refer to **Appendix E** for more details. As an overriding approach, surface water at the site is managed using a "no off-site discharge principle". Most of the available options are dependent on water quality and quantity. Pending acceptable water quality verification, the management options available may include, but are not limited to, the following:

- On-site dust control;
- Clay soil conditioning (addition of moisture) to facilitate clay liner material placement and remoulding;
- Other soil conditioning (addition of moisture) during site preparation to facilitate material placement and achieve specified compaction (Proctor) values
- Irrigation of landscaping features and poplar plantation during dry weather periods.
- Temporary storage within ponds, pits and tanks;
- Used to blend with leachate for irrigation purposes;
- Disposal to an approved off-site waste water treatment facility; and
- Moisture conditioning for incoming dry waste placement.

Operational performance assessment of the new stormwater ponds, CD and SDL has been addressed and is subject to the criteria and protocols within the following documents:

- 1. Development and Operations Report (D&O) West Carleton Environmental Centre, WSP, dated July 2014.
- Environmental Monitoring Plan, Groundwater, Surface Water, Leachate and Subsurface Gas Components, West Carleton Environmental Centre, prepared for Waste Management of Canada Corporation, prepared by WESA, a Division of BluMetric Environmental Inc., dated July 2014.

# 4. References

- 1. Development and Operations Report (D&O) West Carleton Environmental Centre, WSP, dated July 2014.
- Best Management Practices Plan (Surface Water, Sediment & Erosion Control), West Carleton Environmental Centre, prepared for Waste Management of Canada Corporation, prepared by WSP Canada Inc., dated July 2014.
- 3. Environmental Monitoring Plan, Groundwater, Surface Water, Leachate and Subsurface Gas Components, West Carleton Environmental Centre, prepared for Waste Management of Canada Corporation, prepared by WESA, a Division of BluMetric Environmental Inc., dated July 2014.

Prepared by:

WSP Canada Inc.

Norman A. Bell, P.Geo. Senior Hydrogeologist/Project Geoscientist /nab/dlw



Appendix A

Application for Permit to Take Water



# Application for Permit to Take Water

Ce formulaire est disponible en français

131-19416-00

			For Office Use Only					
		Reference Number	Payment Received Date (y/m/d) Initials					
			\$					
	<u>(</u>	General Information and Instructio	<u>ns</u>					
<u>Genera</u>	<u>al:</u>							
Informa <i>Environ</i> required	ation requested in this form is collected und <i>mental Bill of Rights</i> , C. 28, Statutes of On d by Section 34 (OWRA).	er the authority of the <i>Ontario Water R</i> Itario, 1993, (EBR) and will be used to a	esources Act, R.S.O. 1990 (OWRA) and the evaluate applications for a Permit to Take Water as					
<u>Instruc</u>	ctions:							
1.	Applicants are responsible for ensuring please refer to the "Guide to Permit to Ta documentation are available from your lo section of the Ministry of the Environmen	ng that they complete the most received water Application Form" (referred to cal Regional or District Office of the Mit twebsite at <a href="http://www.ene.gov.on.ca/">http://www.ene.gov.on.ca/</a>	<b>t application form.</b> When completing this form, o as the Guide). Application forms and supporting nistry of the Environment, and in the "Publications" <u>envision/gp/index.htm</u> .					
2.	2. Questions regarding completion and submission of this application should be directed to local Regional Office of the Ministry of the Environment. Contact information for these offices is available in the Guide or on the Ministry of the Environment website at <a href="http://www.ene.gov.on.ca/envision/org/op.htm">http://www.ene.gov.on.ca/envision/org/op.htm</a>							
3.	3. This form must be completed with respect to all the requirements of the Guide for it to be considered an application for approval. Incomplete applications will be returned to the applicant.							
4.	A complete application consists of:							
	<ul> <li>(1) a completed, signed application form</li> <li>(2) all required supporting information ide</li> <li>(3) a certified cheque or money order, in when required. Payment may also be</li> </ul>	entified in this form and the Guide, and Canadian funds, made payable to the e made by Visa, MasterCard or Americ	<i>Ontario Minister of Finance</i> for the application fee an Express,					
I	The Ministry may require additional infor	mation during the technical review of a	ny application initially accepted as complete.					
5.	The original application, along with suppo	orting information and the application fe	e should be sent to:					
	Ministry of the Environment, Attention: Permit to Take Wat Director, Environmental Asse 2 St. Clair Avenue West, Floor Toronto, Ontario, M4V 1L5	er Director ssment and Approvals Branch, r 12A						
6.	Information contained in this application for Information submitted as supporting infor and Protection of Privacy Act (FOIPPA) the Ministry of the Environment may mak confidential material, please indicate why	form is not considered confidential and rmation may be claimed as confidential and the <i>EBR</i> . If you do not claim confi the information available to the public you believe the information is confider	will be made available to the public upon request. but will be subject to the <i>Freedom of Information</i> dentiality at the time of submitting the information, without further notice to you. If you are identifying tial.					
1. Perm	nit Administration							
Please in	ndicate if this is an application for a:	New Permit     Amendment to Permit (attach a photoc     Renewal of Permit (attach a photocopy	opy of permit) of permit)					
2. Class	sification							
Clas	ssification Fee Required	No Fee Required						

#### Cla $\square$ Category 1 \$750 П Reason X X Category 2 \$750 Reason П $\square$ Category 3 \$3,000 Reason

# 3. Applicant Information

Applicant Name (legal name of individual or organization as evidenced by legal documents such as a copy of Dr	iver's Licence or Master Business Licence) Business Identification Number
Waste Management of Canada Corporation	876294844
Business Name (the name under which the entity is operating or trading if different	from the Applicant Name - also referred to as trade name)
Applicant Type:	North American Industry Classification System (NAICS) Code
X Corporation Federal Government	1 1 1 4 2 1
Individual Municipal Government	
Partnership Provincial Government	
Sole Proprietor Other (describe):	

# 4. Applicant Physical Address

Civic Address - Street information (street number/name/type/direction/unit/suite/emergency 911 location number and street)									
2301 Carp Road									
City / Town	County/Distrie	ct	Province/State	Country	Postal Code				
Ottawa			Ontario	Canada	K0A 1L0				
Telephone Number (including area co	de)	Fax Number (incl	luding area code)	E-mail Address					
613-831-3565		613-38	8-2785	rcleland@wm.co	m				

5. Applicant Mailing Address	Same as Applicant Physical Addre	ess? 🗙 Yes	No If no, complete below							
Civic Address - Street information (street number/name/type/direction/unit/suite/emergency 911 location number and street/P.O.Box/Rural Route Number)										
City / Town	Province/State	Country	Postal Code							

6. Project Technical Information Contact		Same a	as Applicant?	Yes	X No	If no, complete below
Name Company						
Norm Bell WSP Canada Inc.						
Address Information:						
Same as Applicant Mailing Address? 🔲 Yes 🔀 No If no, please provide technical information contact mailing address below						
Civic Address - Street information (street number/name/type/direction/unit/suite/emergency 911 location number and street/P.O.Box/Rural Route Number)						
1450 1st Avenue West, Suite 101						
City / Town	City / Town         Province/State         Country         Postal Code					ostal Code
Owen Sound Ontario Canada N4K 6W2				N4K 6W2		
Telephone Number (including area code & extension) Fax Number (including a				E-mail Address		
519-376-7612	519-376-8008			norm.bell@	)wspgrou	up.com

**7. Source Information** – Note: Source Information must be provided separately for each source. Please complete and submit multiple copies of this Source Information section (pages 3 and 4 of this form) if your application includes more than one source.

Number of Water Taking Sources Inclu	roconori (pagee	otion (do not include de	maatia waaa that	de net reguire		660166.
Total Number of Wells	Total Number o	f Laka Intakas	Total Number of	f Bonds	Total Nu	mbor of Watercourse Intakes
		Lake Intakes		Ponus		mber of watercourse makes
0	0		2		0	
Source Location Information (if multiple	e sources are incli	uded in application, pro	vide information f	or each source	)	
Civic Address - Street information (stre	et number/name/	type/direction/unit/suite	/emergency 911 I	location numbe	r and street)	
2301 Carp Road	0				Defe	
Lot	Concession		Part		Refere	nce Plan
3 and 4	3				Refer	to Appendix 1-B of D&O
Municipality/Unorganised Township	Co	ounty/District		Orig	ginal Geographic	Township
Ottawa		Ottawa		Т	wnshin of Hu	intley: West Carleton
						anticy, west sufficient
Geographic (GPS) Coordinates (to be	provided in Datun	n NAD83)	- <b>F</b> aat		NI	le utile i e e
	uracy Estimate			ing		lortning
Google Earth		18	4	424551		5014528
Is the Applicant the owner of the site w X Yes No <b>if no, attach the ow</b>	here water taking ner's name, add	will occur?	er granting cons	ent for the app	plicant to access	s the water taking location
	r located in an are	ea of development conti	ol as defined by	the Niagara Eso	carpment Plannin	ng & Development Act?
Yes 🖄 No						
Is the site where water taking will occu regulation made under the Oak Ridges	r located on the C Moraine Conserv	oak Ridges Moraine Con vation Act)?	servation Area a	s defined by the	e Oak Ridges Mo	praine Conservation Plan (a
Are you aware of any complaints or im	pacts resulting fro	m water takings at the	site?			
Yes if yes, please des	cribe:					
Will water from the site be packaged in	a container (bott	led water, tanks)?	_			
Yes If yes, what size o	f containers?	greater than 20	litres 门 20	) litres or less		
X No						
Are wells located within 500 m of the site where water taking will occur?						
X Yes		5				
No if no, what is the di	stance to the nea	arest well?				
Is municipal water available to all dwellings within 500m of the site where water taking will occur?						
Estimated start date of water taking	Water taking to					
June 2016	extend for a period	od of:20		weeks		
Is activity subject to the Environmental	Assessment Act?	?				
Yes if ves. please attac	h approval or No	otice of Completion				
If yes, did the project receive any Part	II Orders / Bump-	Up requests?			_	
Yes if yes, what was t	he date of the Mi	nister's Decision?			De	ecision pending
List any public consultation/potification	that has occurred	t related to the propose	d water taking /i /	a public boarin	as notification of	f First Nations, etc.)
List any public consultation/notification that has occurred related to the proposed water taking (i.e., public hearings, notification of First Nations, etc.)						
Landfill expansion was subject of a full EA which was approved						
	to this table if -	nalving to take water	from 0		om musicia-l	ditab anon drain stal
Watercourse - please comple	te triis table if a	opiying to take water	Tribute a valerCO	uise (i.e., stře	атт, ттипістраї	uton, open urain, etc.)
vvatercourse Name			i ributary to			
Does flow in the watercourse stop at a	ny time during the	year?				
Yes if ves. during which	ch months?		For what	It period of time	?	
Do you move/relocate the water intake	(pump)?					

if yes, please provide primary and secondary locations on attached map

Yes No

# Well - please complete this table if applying to take water from a well (includes sumps for mines and quarries)

Well Name / Identifier	Water Well Record Number	If not available, provide name of property owner at time of well construction
Has the well been deepened?		
Yes if yes, what w	as the date of deepening?	
No No		
Type of Well: Drilled	Bored Dug Dri	iven or Jetted (sandpoints/wellpoints)
		If 'Driven or Jetted', provide the following:
		Total number of sandpoints/wellpoints:
		Number of interconnected sandpoint/wellpoint systems:
Can you measure the depth to wa	ter in this well?	
Yes if yes, what is	the depth to static water level?	Date Measured:
No No		
Has a pumping test been done?		
Yes if yes, please	attach report	
No No		

**Lake -** please complete this table if applying to take water from a lake

Lake Name

# **Pond/Reservoir -** please complete this table if applying to take water from a pond/reservoir

Pond Name / Identifier						
Was the pond constructed (ma X Yes <b>if yes, ple</b>	an made)? ase provide date of construc	ction To be con	structed a	fter 2016		
No No						
Pond Size						
Average Length	Average Width	Average Depth of V	Vater	Maximum Depth	of Water	Approximate Volume of Pond
167m #1 / 214m #2	39.5m #1 / 47m #2	0.6m for #1 an	d #2	1.81m #1 / 2	2.6m #2	2,598m <sup>3</sup> #1 / 4,200m <sup>3</sup> #2
Pond Type						
Select the diagram that most a	Accurately resembles your por		$\leq$	$\sum$		$\bigcirc$
online	by-p	bass		connected		X dugout
Source of pond water (select a	all that apply)					
Seepage / springs / gro	undwater					
Surface water runoff (including tile drains, does not include watercourse or open channel)						
Pumped water (if water	is pumped into a pond, compl	ete section informatio	n for source	from which water i	s pumped - i.e	e., well, lake or watercourse)
X Flowing water (waterco	urse, open drains, ditches, etc	.)				
If "flowing water",						
1. Does water flow inte	o the pond (inflow)?	X Yes	No No			
If yes, is there a stru	If yes, is there a structure to regulate the inflow?					
2. Does water flow ou	t of the pond (outflow)?	X Yes	🗌 No			
If yes, is there a cor	trol structure to regulate the o	utflow? 🛛 Yes	No No	If yes, describe:		

# 8. Public Consultation / Environmental Bill of Rights (EBR) Requirements

Is this application for water taking to extend for a period of less than one year?

No If no, this application may be subject to posting and/or public consultation requirements under the Environmental Bill of Rights. For more information, please refer to the Guide.

Is this application for agricultural use or aquaculture?

X

Yes X
-------

No If no, this application may be subject to posting and/or public consultation requirements under the Environmental Bill of Rights. For more information, please refer to the Guide.

## 9. Water Taking Volumes

Purpose Options for Water Taking				
	Purpose			
Agriculture	irrigation of (includes frost protection): field and pasture crops; fruit orchard; market garden/flowers; nursery;			
	sod farm; tender fruits; tobacco, other (must specify)			
Commercial	aquaculture, bottled water, golf course irrigation, mall/business; snowmaking, other (must specify)			
Construction	Dredging, road building, other (must specify)			
Dewatering	pits and quarries; construction; other (must specify)			
Industrial	aggregate washing, brewing/soft drinks, cooling water, food processing, manufacturing; pipeline testing; power			
	generation; other (must specify)			
Institutional	school, hospital, other (must specify)			
Recreation	aesthetic, fish pond, wetland, other (must specify)			
Remediation	groundwater; other (must specify)			
Water Supply	campground, communal, municipal, other (must specify)			
Miscellaneous	dam/reservoir, heat pump, wildlife conservation, pumping test, other (must specify)			

#### Water Source Information – Table A (Units in Litres)

Source Name	Purpose (select from "purpose" column in table above)	Maximum rate per minute	Maximum number of hours of taking a day	Maximum volume per day	Typical volume per day	Maximum number of days of taking in a year	Earliest calendar date of taking (mm/dd)	Latest calendar date of taking (mm/dd)
Stormwater Pond 1 (Source 15)	Miscellaneous	2,400	10	62,500		240	04/01	12/01
Stormwater Pond 2	Miscellaneous	2,400	10	105,000		240	04/01	12/01
CD (Source 17)	Miscellaneous	2,400	24	3,456,000		365	01/01	12/31
SDL (Source 18)	Miscellaneous	900	24	1,296,000		365	01/01	12/31

# 10. Attachments

The fo	lowing must be attached for all applications (Category 1, 2 and 3) to be complete:
X	<ul> <li>Map Requirements</li> <li>On a 1:10 000 OBM (Ontario Base Map) (1:50 000 only acceptable in locations where 1:10 000 is not obtainable), mark and label: <ul> <li>all existing and proposed water taking locations with sources corresponding with source name</li> <li>all of the following features within 500m of each source: existing wells (indicate use of existing well, springs, watercourses, wetlands, water bodies, property lines, locations and name of property owners, nearest road intersection, dwellings.</li> </ul> </li> </ul>
	Describe in detail how, where and when all water is obtained, stored, transferred, used and returned to the environment (if applicable). Details must include the source of all water takings (and corresponding source name if applicable), purpose of the water taking, period of water taking, and maximum quantity requested (see Guide for further instruction). Note: If your application is subject to posting on the Environmental Bill of Rights (EBR) Registry, this description will be used to create the Proposal Notice. The ministry may change the wording as required, to meet the EBR posting requirements.
	Describe how water taking needs (rates, amounts and time periods) were determined. Provide all relevant information and calculations to demonstrate the water takings requested are warranted. Calculation worksheets are available. Refer to Appendix E of the Guide.
	Attach completed water conservation Schedule 1.
The fol	lowing must be attached for all Category 2 applications:
X	Completed Schedule 2 and/or Schedule 3 signed by a Qualified Person.
The fol	lowing must be attached for all Category 3 applications:
	Study

# 11. Statement/Signature of Applicant

l, the undersigned, hereby declare that to the best of my knowledge:					
<ul> <li>The information contained herein and the information submitted in support of this application is complete and accurate in every way and I am aware of the penalties against providing false information.</li> <li>The Project Technical Information Contact identified in Section 6 if this form is authorized to act on my behalf for the purpose of obtaining this approval.</li> </ul>					
Print Name	Signature	Date (yyyy/mm/dd)			
Reid Cleland	he lite	2014/08/20			

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# Application for Permit to Take Water

Ce formulaire est disponible en français

For Office Use Only					
Reference Number	Payment Received	Date (y/m/d)	Initials		
	\$				

# 12. Payment Information

Application Category	Amount Enclosed	
Category 1 (\$750) X Category 2 (\$750) Category	bry 3 (\$3000) \$ 750	no fee required
Method of Payment		
X Certified Cheque Money Order VISA	MasterCard American Express	
Credit Card Information (if paying by VISA, MasterCard or Americ	can Express)*	
Name on Card (please print)	Credit Card Number	Expiry Date (yy/mm)
Cardholder Signature	Date (y/m/d)	

\*NOTE: credit card accepted for payments UNDER \$10,000.00 only.

Appendix B

Existing Permit to Take Water 8737-7FZNB4 dated July 14, 2008 Ministry of the Environment Eastern Region Technical Support Section Water Resources 1259 Gardiners Rd, PO Box 22032 Kingston, ON K7P 3J6 Tel: (613) 549-4000; Ministère de l'Environnement

Direction régionale de l'Est Secteur du Soutien Technique Ressource en eau 1259 Chemin Gardiners, CP 22032 Kingston, ON K7P 3J6 Tél:(613) 549-4000;



July 14, 2008

Mr. Remi Godin Waste Management of Canada Corporation 117 Wentworth Court Brampton, Ontario L6T 5L4 Canada

Dear Mr. Godin:

RE: Permit To Take Water No. 8737-7FZNB4 Lots: 3 & 4, Concession: III Ottawa Reference Number 4886-7E8KQG

Please find attached Permit To Take Water 8737-7FZNB4 which authorizes the withdrawal of water in accordance with the application for this Permit To Take Water, dated April 28, 2008 and signed by Remi Godin.

Please note that the attached permit expires on July 1, 2018.

The Water Taking and Transfer Regulation, O. Reg. 387/04 came into effect on January 1, 2005. It requires that permit holders track the volume of water they take daily and report these volumes to the Ministry the following year. Please ensure that you inform yourself of the monitoring and reporting requirements related to your permit. You can find additional information on the MOE web site at <u>www.ene.gov.on.ca</u> or by calling the nearest MOE office.

Take notice that in issuing this Permit To Take Water, terms and conditions pertaining to the taking of water and to the results of the taking have been imposed. The terms and conditions have been designed to allow for the development of water resources, while providing reasonable protection to existing water uses and users.

Yours truly,

Poter Tasla

Peter Taylor Director, Section 34, Ontario Water Resources Act, R.S.O. 1990 Eastern Region

# File Storage Number: P 8737 OTT



Ministry of the Environment Ministère de l'Environnement

## AMENDED PERMIT TO TAKE WATER Surface and Ground Water NUMBER 8737-7FZNB4

Pursuant to Section 34 of the <u>Ontario Water Resources Act</u>, R.S.O. 1990 this Permit To Take Water is hereby issued to:

Waste Management of Canada Corporation 117 Wentworth Court Brampton, Ontario L6T 5L4 Canada

For the water PW1, PW2, PW3, PW4, PW5, PW6, PW7, PW8, PW9, PW10, PW20, taking from: Pond, Pond, Pond

Located at: Lot 3 & 4, Concession III Ottawa

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

#### DEFINITIONS

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment.
- (d) "District Office" means the Ottawa District Office.
- (e) "Permit" means this Permit to Take Water No. 8737-7FZNB4 including its Schedules, if any, issued in accordance with Section 34 of the OWRA.
- (f) "Permit Holder" means Waste Management of Canada Corporation.
- (g) "OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

#### TERMS AND CONDITIONS

#### 1. Compliance with Permit

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated April 28, 2008 and signed by Remi Godin, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

# 2. General Conditions and Interpretation

#### 2.1 Inspections

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

#### 2.2 Other Approvals

The issuance of, and compliance with this Permit, does not:

(a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

#### 2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

#### 2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

#### 2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

#### 2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

#### 3. Water Takings Authorized by This Permit

#### 3.1 Expiry

This Permit expires on July 1, 2018. No water shall be taken under authority of this Permit after the expiry date.

# 3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

#### Table A

	Source Name	Source:	Taking	Taking	Max.	Max: Num:	Max. Taken	Max. Num. of Days Taken	Zone/ Easting/
	/ Description:	Type:	Purpose:	Category:	Minute (litres):	per Day:	(litres):	per Year:	Northing:
1	PW1	Well	Other- Remediation	Remediation	227	24	327,310	365	18 346816 5016409
2	PW2	Well	Other - Remediation	Remediation	189	24	272,760	365	18 346873 5016343
3	PW3	Well Drilled	Other - Remediation	Remediation	57	24	81,830	365	18 346926 5016274
4	PW4	Well	Other - Remediation	Remediation	76	24	109,100	365	18 346994 5016213
5	PW5	Well Drilled	Other - Remediation	Remediation	57	24	81,830	365	18 347050 5016151
6	PW6	Well Drilled	Other - Remediation	Remediation	95	24	136,380	365	18 347094 5016097
7	PW7	Well Drilled	Other - Remediation	Remediation	95	24	136,380	365	18 347136 5016045
8	PW8	Well Drilled	Other - Remediation	Remediation	95	24	136,380	365	18 3471 <b>77</b> 5015992
9	PW9	Well	Other - Remediation	Remediation	246	24	354,590	365	18 347220 5015933
10	PW10	Well	Other - Remediation	Remediation	133	24	190,930	365	18 347262 5015884
11	PW20	Well Drilled	Other - Remediation	Remediation	151.5	24	218,210	365	18 346734 5016385
12	Pond Just	Pond Dugout	Other - Miscellaneous	Miscellaneous	42	10	25,000	150	18 347054 5015739
13	Pond Pizkv	Pond Dugout	Other - Miscellaneous	Miscellaneous	583	10	350,000	200	18 347054 5015739
14	Pond Non V control	Pond Dugout	Other - Miscellaneous	Miscellaneous	52	24	75,000	365	18 347054 5015739
						Total Taking:	2,495,700		

3.3 Notwithstanding Table A, source # 12 water shall be taken for dust control, source # 13 water shall be taken for irrigation and source # 14 water shall be taken for misting.

#### 4. Monitoring

- 4.1 The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured amounts of water pumped per day for each day that water is taken under the authorization of this Permit. A separate record shall be maintained for each source. The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request.
- 4.2 The total amounts of water pumped shall be measured using a properly calibrated flowmeter and totalizer.
- 4.3 The Permit Holder shall monitor and record groundwater levels on a monthly basis from the following monitoring wells: PW1- PW11; PW13; PW20; PW25; P31; P32; P85; W16-3; W19; W46-2; W48-3; W49-3; W55-2; W56-2; W69; W67-2; W66; W80 and W81. The groundwater levels shall be reported in the annual monitoring (as required by Certificate of Approval A461002 and outlined in the Environmental Monitoring Plan, 2008) report along with interpretations related to the effectiveness of the groundwater remediation program.

#### 5. Impacts of the Water Taking

#### 5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

#### 5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

#### For Groundwater Takings

If the taking of water is observed to cause any negative impact to other water supplies obtained from any adequate sources that were in use prior to initial issuance of a Permit for this water taking, the Permit Holder shall take such action necessary to make available to those affected, a supply of water equivalent in quantity and quality to their normal takings, or shall compensate such persons for their reasonable costs of so doing, or shall reduce the rate and amount of taking to prevent or alleviate the observed negative impact. Pending permanent restoration of the affected supplies, the Permit Holder shall provide, to those affected, temporary water supplies adequate to meet their normal requirements, or shall compensate such persons for their reasonable costs of doing so.

If permanent interference is caused by the water taking, the Permit Holder shall restore the water supplies of those permanently affected.

#### 6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

- 1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
- 2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
- 3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the <u>Ontario Water Resources Act</u>, R.S.O. 1990, you may by written notice served upon me, the Environmental Review Tribunal and the Environmental Commissioner, Environmental Bill of Rights, R.S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 101 of the <u>Ontario Water Resources Act</u>, as amended provides that the Notice requiring a hearing shall state:

- 1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
- 2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

- 3. The name of the appellant;
- 4. The address of the appellant;
- 5. The Permit to Take Water number;
- 6. The date of the Permit to Take Water;
- 7. The name of the Director;
- 8. The municipality within which the works are located;

AND

This notice must be served upon:

The Secretary Environmental Review Tribunal 655 Bay Street, 15th Floor Toronto ON M5G 1E5 

 The Environmental Commissioner

 1075 Bay Street
 AND

 6th Floor, Suite 605

 Toronto, Ontario M5S 2W5

The Director, Section 34 Ministry of the Environment 1259 Gardiners Rd, PO Box 22032 Kingston, ON K7P 3J6

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600

by fax at (416) 314-4506

by e-mail at www.ert.gov.on.ca

This instrument is subject to Section 38 of the Environmental Bill of Rights that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.

This Permit cancels and replaces Permit Number 6642-6V4T8Y, issued on 2006/11/02.

Dated at Kingston this 14th day of July, 2008.

star Tayla

Peter Taylor Director, Section 34 Ontario Water Resources Act, R.S.O. 1990

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This Schedule "A" forms part of Permit To Take Water 8737-7FZNB4, dated July 14, 2008.

Appendix C

Schedule 1 – Implementation of Water Conservation in Accordance with Best Management Practices and Standards for the Relevant Sector

# **Appendix E**

# Schedule for Water Conservation Measures

# Schedule 1 – Implementation of Water Conservation in accordance with Best Management Practices and Standards for the Relevant Sector

# **General Information and Instructions**

# **Section 1: General Information**

Information on this Schedule is collected under the authority of the *Ontario Water Resources Act, R.S.O. 1990* (OWRA), and the new *Environmental Bill of Rights, C.* 28. Statutes of Ontario, 1993, and will be used to evaluate applications for a Permit to Take Water as required by Section 34 (OWRA).

# Instructions:

- 1. This Schedule forms part of the Permit to Take Water application form and is subject to all provisions and instructions where applicable.
- 2. All questions of Section 2 of this Schedule must be answered for this Schedule to be considered complete.

# Purpose:

The purpose of this Schedule is to allow persons applying for a permit required by the Ministry to document in the application all water conservation measures and practices that are currently being undertaken or that is anticipated to be undertaken for the duration of the permit.

Persons applying for a permit are encouraged to take all reasonable and practical measures to conserve water and to be up to date with sector-specific best management practices and standards for water conservation (i.e. whether you are currently implementing or anticipate implementing water conservation best water management standards and practices relevant to your sector).

Various sector associations publish information on best practices that may be useful in determining practices and standards for water conservation. Examples of these sector-specifc assocations include the following:

- Municipal Sector Ontario Water Works Association
- Agricultural Sector Ontario Ministry of Agriculture (Fact Sheets and Guides on Best Management Practices containing information on efficient irrigation systems, staggering irrigation schedules and preparing Environmental Farm Plans)
- **Other Sectors** For information on up-to-date best management practices and measures for water conservation, contact your relevant sector association.

Please note that this schedule may not be directly applicable to certain takings, such as pumping tests, instream uses, site dewatering and certain industrial processes. In these cases, consideration must be given to the fate of the water or system design requirements.

# Section 2: Water Conservation Best Management Practices and Standards

Use this section of the Schedule to indicate what conservation measures and practices you are currently implementing or anticipate implementing. Where relevant, additional information can be attached as an appendix to this Schedule.

State your goals for reducing the use, loss or waste of water or for increasing the efficiency of water use (e.g., litres per day per unit of production <u>or</u> litres per day per capita for the residential sector).

# **Schedule 1 continued**

Check off which of the following water conservation best management measures and practices that you have implemented or will implement for the duration of the permit:				
	Implemented	To be Implemented		
Water Use Audit				
Universal metering of all users (municipalities)				
Water Efficient Fixtures/Equipment/Technology				
Develop and Implement an Overall Water Conservation and Efficiency Program				
Leak Detection/Loss Prevention/Control Program				
Public/Employee Information/Education/Outreach				
Landscaping techniques/Site and Urban Design Principles				
Water Efficient production processes/practices (e.g. re-use of water)		X		
Economic Incentives/Cost-Share/Full Costing recovery/ tax credits/rebate programs				
Other (please specify):				

Of the measures and practices checked off above, provide specific details of the best management practices applied or to be applied including equipment (e.g. pump specification), processes, such as water used for industrial production and/or irrigation system(s), current and proposed technology, approach, processes and procedures:

Refer to References 1 and 2 of this document.

For the above measures and practices, list information relevant for your sector and/or other sources of information used in determining water conservation and efficiency management practices and measures:

List dates of when the best management measures and practices were or will be applied for the duration of the permit:

Best Management will be used during and throughout all water taking activities.

Identify any approval or certification that you have received for implementing water conservation and efficiency best management practices, e.g. Environmental Farm Plan, Audubon Cooperative Sanctuary Program for Golf Courses:

None

Appendix D

Schedule 3 – Qualified Person Certification for Category 2 Surface Water Takings

# Schedule 3 – Qualified Person Certification for Category 2 Surface Water Takings

# **General Information and Instructions**

# General:

Information on this Schedule is collected under the authority of the *Ontario Water Resources Act, R.S.O. 1990* (OWRA) and the *Environmental Bill of Rights, C.* 28. Statutes of Ontario, 1993, and will be used to evaluate applications for a Permit to Take Water as required by Section 34 (OWRA).

# Instructions:

- 1. This schedule forms part of the Permit to Take Water application form and is subject to all provisions and instructions where applicable.
- 2. A complete schedule consists of:
  - 1) a completed and signed schedule attached to a completed application form.
  - 2) confirmation that the proposed taking meets one of the technical screening criteria.
  - 3) the qualified person to complete his/her contact information.
  - 4) the qualified person to self declare that they meet the qualifications of a Qualified Person as set out in schedule.

#### Purpose:

A Category 2 taking will satisfy the scientific evaluation requirements where a qualified person has certified that the proposal meets the criteria for surface water as specified below.

A qualified person for PTTW surface water studies is a person holding at minimum a bachelor degree with specialization in hydrology, aquatic ecology, limnology, biology, physical geography and/or water resource management or engineering. The type of scientific work that a qualified person performs must be consistent with that person's education and experience.

The qualified person will be required to consult with other agencies, as appropriate, to verify that the evaluation criteria are met. The Director will verify that a qualified person has confirmed that the proposed water taking meets the screening criteria.

# Category 2 – Criteria for Surface Water Takings

A C mee	ategory 2 surface water assessment requires the qualified professional to confirm that the proposal ets one of the following [check appropriate box]:
	Great Lakes or connecting channels takings less than the Great Lakes Charter threshold.
	<b>Takings from sources with previous assessments</b> (i.e. further to a previous study and implementing previously established controls)
	River and Streams (3 <sup>rd</sup> order or higher order) taking $<5\%$ of $7Q_{20}$
	Transitional Permits where the Director previously required upgrades/modifications to water taking
	Transitional surface water Permits are issued when an existing water taker who has been asked by the Director to implement upgrades or modifications to their water taking facilities applies for a temporary short-term taking that would allow him/her to continue to operate while scientific studies are being finalized and improvement works are being implemented.
	<b>Takings and Returns</b> where water is removed for a short time only and water is returned to a nearby point with no significant change to water quantity or quality (i.e. for cooling, hydrostatic testing, hydraulic lake dredging)
	<b>Lakes and Ponds</b> takings <1,000,000L/day twice per week from water bodies >10ha in size that are not on-stream and not part of the headwaters of any watercourse. More frequent takings require supporting studies.

# **Schedule 3 continued**

# **Suggested Conditions**

Please use this space to describe proposed conditions for this water taking.

As detailed in Table A of the PTTW.

# **Contact Information**

Company Name ( <i>if applicable</i> ):						
Business Number ( <i>if applicable</i> ):		Professional Designation:				
X Mr. 🗌 Ms. 🗌 Mrs. 🗌	Other:	<ul> <li>X] Bachelor degree</li> <li>Please specify area of study: P.Geo.</li> <li>Licensed Professional Engineer</li> <li>Exempted Professional Engineer</li> </ul>				
First Name: Norman	Middle Initial: A	Last Name: Bell				
Tel: (519) 376-7612 Ext. 13235	Fax: (519)376 -	8008 Ext.	08 Ext. E-mail: norm.bell@wspgroup.co			
Street Address: 1450 1st Avenue West, Suite 101						
Mailing Address (if different than street address):						
County: Grey		City/Town: Owen Sound				
Province: Ontario	Postal Code: N	N4K 6W2	Country: Canada			

# References

Please list all documents which were considered by the qualified person in the preparation of this schedule.

Note that all referenced documents must be retained by the applicant as these may be requested by the Ministry as part of the evaluation of this application and supporting schedule. The Permit may also include special conditions which require the applicant to retain these documents for a specified period.

As detailed in Section 4 of the July 2014 WSP report.

# Declaration

I, the undersigned hereby declare that to the best of my knowledge, the information contained herein and the information submitted in support of this schedule is complete and accurate in every way.				
Qualified Person Signature: _	hitm.	Date (yyyy/mm/dd):	2014/07/15	
Name (Please print or type):	Norm Bell			

Appendix E

Appendix 8-C (Development and Operations Report (D&O) West Carleton Environmental Centre, WSP, July 2014)

# Appendix 8-C

# Stormwater Management Performance Assessment

This appendix outlines decision making criteria related to operation of the stormwater management (SWM) system. It includes performance assessment of the SWM ponds, disposal of secondary drainage layer (SDL) water and construction water into the SWM conveyance/holding system. Decision making criteria are presented in the following flow charts. The following field and laboratory sampling information shall be read in conjunction with the flow charts.

# 1. <u>Sampling Locations</u>

- Stormwater Pond Inlet
- Stormwater Pond Content
- Stormwater Pond Outlet (only if outlet valve open).
- SDL sampling port near Pumping Station PS6.
- Construction water-variable locations.

# 2. Water Quality Based on Field Sampling

#### Level 1

conductivity < 1,000 µS/cm</li>

# Level 2

- 1,000  $\mu$ S/cm < conductivity < 2,000  $\mu$ S/cm

# Level 3

- conductivity > 2,000  $\mu$ S/cm
- 6.5 < pH < 9.0
- dissolved oxygen (DO) < 3 mg/L May through October</li>

<5 mg/L November to April

#### 3. Water Quality Based on Laboratory Sample

#### Elevated:

- conductivity between 1,000 and 2,000 µS/cm
- TDS between 600 and 1,200 mg/L
- chloride between 150 and 250 mg/L
- sodium between 110 and 200 mg/L

# Exceedance:

- conductivity > 2,000  $\mu$ S/cm
- TDS > 1,200 mg/L
- chloride > 250 mg/L
- sodium > 200 mg/L

Increased turbidity shall not be considered as visual impairment of surface water. In case of a spill, indicator parameters should be revised/added based on the nature of spilled liquid.

Corrective actions will always depend on the nature of the problem. Usually it will require fixing the source of the problem such as leachate seep, exposed waste, spill, etc. If the pond contents are contaminated, corrective measures may include in-situ treatment, dilution (mixing to agitate contents, floating aerator and/or other measures to prevent stagnation), containment with booms, removal of floating material and removal of pond contents for treatment on-site or off-site.

#### A - Regular Pond Operation



# **B** - Stormwater Pond Emergency Response



# C - Handling of Secondary Drainage Layer (SDL) Water



# D - Construction DewaterIng (Handling of Construction Water (CW))

