

Thames-Sydenham and Region

Source Protection Plan Glossary of Terms Approved

September 17, 2015

Produced in support of the Thames-Sydenham and Region Source Protection Plan for: Lower Thames Valley Source Protection Area St Clair Region Source Protection Area Upper Thames River Source Protection Area

Prepared by the Thames-Sydenham and Region Source Protection Committee







Ontario

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Thames – Sydenham and Region c/o Upper Thames River Conservation Authority 1424 Clarke Road, London, ON, N5V 5B9

September 17, 2015

Dear reader

Re: Approval of Source Protection Plan and Updated Assessment Reports

The Thames-Sydenham Region Source Protection Plan and the updated Assessment Reports for the Lower Thames Valley, St. Clair Region and Upper Thames River Source Protection Areas represent significant milestones in the Source Protection Committee's progress in protecting municipal drinking water sources in the Thames-Sydenham and Region. The Assessment Reports were approved September 16, 2015 and the Source Protection Plan was approved September 17, 2015. The Source Protection Plan will come into effect December 31, 2015. The Source Protection Committee realizes that these are "living documents" which will need to be updated and amended from time to time. Future updates will need to be approved prior to coming into effect.

After formal submission of these documents for approval the Ministry of the Environment and Climate Change, requested that several additional changes be made prior to approval. The general changes made to the enclosed documents, between submission of the documents and approval of the documents, are listed below.

Source Protection Plan

- Minor corrections to the margin notes of Volume II policy OC-2.42 and the title of Volume III policy 2.30
- Addition of this letter

Assessment Reports (SCRSPA, LTVSPA and UTRSPA)

- Identification of microsystin LR as an issue for Wheatley and Chatham/South Kent intakes (LTVSPA)
- Revisions to Appendix 4 to direct reader to comments from final consultation
- Minor revisions to wording (SCRSPA, UTRSPA
- Addition of text describing Pre-Consultation in section 2 of the Consultation and Stakeholder Engagement Plan - 2015
- Addition of this letter

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Lower Thames Valley Conservation Authority 100 Thames Street, Chatham, Ontario, N7L 2Y8	St. Clair Region Conservation Authority 205 Mill Pond Cres., Strathroy, Ontario, N7G 3P9	Upper Thames River Conservation Authority 1424 Clarke Road, London, ON N5V 5B9
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The attached submission letter outlines changes that were made to the documents prior to submission. All of these current changes are documented, with the changes undertaken before submission, in the change logs included as supplemental information with the SPP.

We look forward to the successful implementation of this first Source Protection Plan for the Thames-Sydenham and Region following the December 31, 2015 effective date.

Yours truly, THAMES-SYDENHAM and REGION

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Robert Bedggood, Chair Source Protection Committee



Thames – Sydenham and Region c/o Upper Thames River Conservation Authority 1424 Clarke Road, London, ON, N5V 5B9

March 5, 2015

Dear reader

Re: Revised Amended Proposed SPP and Updated Assessment Reports

The Thames-Sydenham and Region Source Protection Committee revised the enclosed plan and reports based on comments received from stakeholders and the province. The revised amended proposed plan is the forth draft version of the Source Protection Plan. The revised updated reports are revised versions of the updated Assessment Reports for the Lower Thames Valley (LTVSPA), St. Clair Region (SCRSPA), and the Upper Thames River (UTRSPA) Source Protection Areas which were consulted on in January 2015. Since posting the previous version the SPC has considered and made revisions based on comments received through previous postings of the plan and reports. The SPC has also made revisions to address comments received from the MOECC on the plan. These documents are being submitted to the Ministry of Environment and Climate Change for approvals.

The general changes that have been made to the enclosed documents are listed below. Those revisions made since consultation are identified in the list below in *italics*. Also enclosed with these documents are change logs for each document detailing the changes that have been made throughout the documents.

Source Protection Plan (volumes 1-3)

- Edits have been made throughout to correct grammar and for ease of reading
- Edits have been made to incorporate updated information including information attained through further technical studies
- Policies have been edited/added in response to comments and new information

Explanatory Document

- Edits have been made throughout to correct grammar and for ease of reading
- Edits have been made to incorporate updated information including information attained through further technical studies
- Edits/additions have been made in response to comments *to provide additional clarification and rationale*

Glossary of Terms

• Web links have been updated

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• New terms have been added

Assessment Reports (SCRSPA, LTVSPA and UTRSPA)

- New or revised Event Based Areas (EBA) for fuel (LTVSPA, SCRSPA)
- Managed Land, Livestock Density and Percent Impervious mapping added for the IPZ-3 where threats can occur (LTVSPA)
- Identification of microsystin LR as an issue for Wheatley intake (LTVSPA)
- Update of the SGRA (LTVSPA)
- Documentation of work completed related to the nitrogen issue for Wallaceburg (SCRSPA)
- Addition of the vulnerable areas for the Kettle-Stoney Point First Nation intake (SCRSPA)
- Documentation of the completion of the Tier 3 Water Budget (UTRSPA) with additional revisions to provide additional information requested by MOECC and MNRF
- Addition of the Issue Contributing Area for Woodstock nitrate issue (UTRSPA) with additional information added to address comments received from MOECC
- General updates to represent the current status of the Assessment Reports (all)
- Removal of system summaries from the appendices in favour of posting them separately as communication tools which may be updated to include policy impacts (all)
- Updates to the number of locations where significant threats are potentially being engaged in (all)

The amended proposed Source Protection Plan and the updated Assessment Reports for the Lower Thames Valley, St. Clair Region and Upper Thames River Source Protection Areas represent significant milestones in the Source Protection Committee's progress in the completion of the first Source Protection Plan for the Thames-Sydenham and Region. While it is expected that these documents will be approved in the summer of 2015, the Source Protection Committee realizes that these are "living documents" which will need to be updated and amended from time to time.

Yours truly, THAMES-SYDENHAM and REGION

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Robert Bedggood, Chair Source Protection Committee

Glossary of Terms

Terms and Acronyms listed in this Table occur throughout the Source Protection Plan and supporting documents. Definitions have been assembled from various sources and compiled into this reference for the convenience of the reader. It is not intended to revise terms defined elsewhere in the Source Protection Plan and its supporting document.

Term	Definition and Source
above ground tank	 A tank that is installed at or above grade level within a building or within a secondary containment but does not include a tank that is in direct contact with backfill material.
activity	 Includes land use as defined in the Clean Water Act, 2006. Activities are prescribed in the Table of Drinking Water Threats: Clean Water Act, 2006 dated December 12, 2008 and in the Technical Rules: Assessment Report.
Aesthetic Objectives (AO)	 An objective established for parameters that may impair the taste, odour or colour of water or which may interfere with good water quality control practices (MOE, 2006)²
	 Examples are taste, colour, turbidity, sodium, chloride and iron (see Section 5 of the Assessment Report for more details)
agricultural source material	 Has the same meaning as in Section 1 of O. Reg. 276/03 (General) made under the Nutrient Management Act, 2002 (Technical Rules: Assessment Report³)
	 Includes farm animal manure, farm yard and manure storage runoff, washwaters from agricultural operations not mixed with human body waste (see website <u>http://www.e-</u> laws.gov.on.ca/html/regs/english/elaws regs 030267 e.htm#BK2)
Aggregate	 Aggregate is defined under the Aggregate Resources Act, 1990 where "aggregate" means gravel, sand, clay, earth, shale, stone, limestone, dolostone, sandstone, marble, granite, rock or other prescribed material
Anaerobic digestion output	 Any solid or liquid material that results from the treatment of anaerobic digestion materials in a mixed anaerobic digestion facility
anthropogenic	 Man made; generally used to indicate whether a drinking water quality issue or transport pathway is due to human activities or due to natural occurrence (see Section 5 of the Assessment Report for more details)
AO	Aesthetic Objectives
AOC	Area of Concern
	 Areas designated under the Great Lakes Water Quality Agreement, because they contained contaminated sediment, inadequately treated wastewater, non-point source pollution, inland contaminated sites or degraded habitat to a greater degree than the rest of the Great Lakes (See website: <u>http://www.ijc.org/php/publications/html/aoc_rep/english/report/chapt er1/index.html</u>)
aquifers	 Underground water bearing material such as rocks or sand from which water can be pumped to the surface

Term	Definition and Source
Area Municipality	 Within Volume II means one or more of the eight lower tier municipalities located within Oxford County, consisting of the City of Woodstock, Town of Tillsonburg, Town of Ingersoll and Townships of Blandford-Blenheim, East Zorra-Tavistock, Norwich, Southwest- Oxford and Zorra.
AR	Assessment Report
ASM	Agricultural Source Material
Assessment Report	 A science-based document that forms the basis of the Source Protection Plan, by identifying vulnerable areas, assessing vulnerability, identifying source water quality issues, identifying threats to the drinking water, and assessing the risk due to threats A requirement of the Clean Water Act, 2006¹ whose contents are set out in the Act, its regulations and technical rules.
AVI	 Aquifer Vulnerability Index
	 An index used to assess the vulnerability of groundwater (see Section 4 of the Assessment Report for more details)
Beneficial Use Impairment	 A change in the chemical, physical, or biological integrity of the Great Lakes system sufficient to cause any of the 14 use impairments in Table 1 (see referenced web site for a complete list) or other related uses covered by Article IV such as the microbial objective for waters used for body contact recreational activities⁴
	 A negative change in the health of a water body making it unusable for a beneficial use that has been assigned to it. Examples of these use impairments include: restrictions on fish and wildlife consumption, beach closings, degradation to aesthetics, loss of fish and wildlife habitat, and restrictions on drinking water consumption.
BTEX	 Benzene, toluene, ethylbenzene and xylene (Table of Drinking Water Threats Glossary⁵)
	 Volatile chemicals found in gasoline, industrial effluents and atmospheric pollution (See website <u>http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/benzene/index-eng.php</u>)
bulk plant	 One or more storage tanks, including their appurtenances, where gasoline or an associated product is received by pipeline, tank vessel, tank car or tank vehicle and is stored in bulk for subsequent transmission by pipeline or transportation or distribution by tank vessel, tank car or tank vehicle.
BUI	Beneficial Use Impairment
СА	Conservation Authority
cardlock/keylock	 An outlet not used by the general public where gasoline or diesel fuel is dispensed unsupervised
Category 1 NASM	 Non-agricultural source materials described in Table 1 of Schedule 4 of Nutrient Management Act.
Category 2 NASM	 Non-agricultural source materials described in Table 2 of Schedule 4 of Nutrient Management Act.
Category 3 NASM	 Non-agricultural source materials described in Table 3 of Schedule 4 of Nutrient Management Act.
CIP	Community Improvement Plans
circumstance	 These are the scenarios in the tables of drinking water threats that determine if an activity is a significant, moderate or low threat to drinking water (see Section 7 of the Assessment Report for more details)

Thames-Sydenham and Region Source Protection Plan **Glossary of Terms**

Term	Definition and Source
closed loop system	 This system circulates Heat Transfer Fluid (HTF) through pipes installed in the ground to utilize the thermal gradient between the HTF and the environment for heating and cooling.
closure plan	 Based on definitions from the Ontario Mining Act, a closure plan means a plan to rehabilitate a site or mine hazard that has been prepared in the prescribed manner and filed in accordance with this Act and that includes provision in the prescribed manner of financial assurance to the Crown for the performance of the closure plan requirements.
CM2	 When used in reference to NASM, means that its content of a regulated metal exceeds that of CM1 NASM but does not exceed the concentration set out in Column 2 or 3 of Table 2 of Schedule 5 of the Nutrient Management Act.
combined sewer	 A sewer intended to function simultaneously as a storm sewer and sanitary sewer.
commercial fertilizer	 A synthetic substance containing nitrogen, phosphorus, potassium or other plant food intended for the use as a plant nutrient.
condition	 Drinking water threats resulting from past activities, and include situations where a certain amount of a contaminant is present in the water in an IPZ or WHPA, or in the sediment in an IPZ (see Section 6 of the Assessment Report for more details)
conveyance	 Is the movement or transfer of stormwater via gutters, sewer pipes, culverts and ditches. Storm sewers collect runoff along roads, and are separate from sanitary sewers that collect wastewater from homes or business.
CSEP	 Consultation and Stakeholder Engagement Plan
CWA	Clean Water Act (2006)
dense non-aqueous phase liquids	 Chemicals that are heavier than water, including petroleum products and chlorinated solvents (such as dichloromethane, trichloromethane), which when released into the ground, cause severe adverse effects in groundwater (see website <u>http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=6A7FB7B2-</u> 1#sub3)
DNAPL	Dense non-aqueous phase liquid (Table of Drinking Water Threats
	Glossary ⁵)
drinking water	 Glossary⁵) Has the same meaning as in the Safe Drinking Water Act, 2002 (Table of Drinking Water Threats Glossary⁵) Generally used to indicate water intended for the purposes of
drinking water drinking water systems	 Has the same meaning as in the Safe Drinking Water Act, 2002 (Table of Drinking Water Threats Glossary⁵)
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	 Has the same meaning as in the Safe Drinking Water Act, 2002 (Table of Drinking Water Threats Glossary⁵) Generally used to indicate water intended for the purposes of drinking Has the same meaning as in the Safe Drinking Water Act, 2002 (Clean Water Act, 2006¹) Generally used to indicate a system that provides users with drinking
drinking water systems	 Has the same meaning as in the Safe Drinking Water Act, 2002 (Table of Drinking Water Threats Glossary⁵) Generally used to indicate water intended for the purposes of drinking Has the same meaning as in the Safe Drinking Water Act, 2002 (Clean Water Act, 2006¹) Generally used to indicate a system that provides users with drinking water, excluding plumbing Means an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulations as a drinking

Term	Definition and Source
DWSP	Drinking Water Surveillance Program
	 Drinking water quality database maintained by MOE
E&O	Education and Outreach
Earth Energy System (also called Geothermal Systems, Ground Source Heat Pump Systems or Geoexhange Systems	• Earth energy systems are defined under the Ground Source Heat Pump Regulation as a heating and cooling system for buildings that uses a fluid to exchange heat with the ground or groundwater.
EBA	Event Based Areas
ECA	Environmental Compliance Approvals
E. coli	Escherichia coli
edge matching	 A process of ensuring that detail along the edge of two adjacent mapping regions match correctly
	 Differences in the information or methodologies used for different mapping projects may result in differing interpretations at mapping boundaries which require professional judgment to interpret differences and determine a consistent representation of the information
end of pipe collection systems	 Provide quantity and quality control. There are many types of these "end of pipe" management systems. One of the most prevalent is stormwater management ponds which help capture excess runoff and hold it until it can be absorbed back into the natural watercourses.
Environmental Registry	 Public notices about environmental matters being proposed by all government ministries covered by the Environmental Bill of Rights; the notices may contain information about proposed new laws, regulations, policies and programs or about proposals to change or eliminate existing ones (See website: http://www.ebr.gov.on.ca/ERS-WEB-External/content/about.jsp?f0=aboutTheRegistry.info&menuIndex=0
EPA	Environmental Protection Act
ERCA	Essex Region Conservation Authority
Escherichia coli or E. coli	 A fecal coliform present in fecal matter and prevalent in sewage, and a strong indicator of recent fecal pollution (MOE, 2006) An indicator microorganism and one of the two Schedule 1 parameters (see Section 5 of the Assessment Report for more
Event Based Areas	 details) In the Thames-Sydenham and Region, Event Based Areas (EBA) are the areas within the Intake Protection Zones (parts of IPZ-1, IPZ-2, IPZ-3) where event-based modelling has demonstrated that a spill can reach the intake at a concentration which would deteriorate the water for the purposes of drinking. Event-based modelling involved the use of specific event which was not to exceed an extreme event as defined by the Technical Rules Each EBA is associated with a specific contaminant, and quantity. The spills modelled may be the result of the local threat activity (transportation) or it may be the result of a similar prescribed drinking water threat (storage or handling). Within the EBA these activities are identified as SDWT under the circumstance (volumes) modelled.

Term	Definition and Source
existing	 As defined in policy 1.11 for Thames-Sydenham and Region and policy OC-1.01 for Oxford County.
Extreme event	 A period of heavy precipitation or winds up to a 100 year storm event; a freshet; or a surface water body exceeding its high water mark (Technical Rules³).
(11)	 An event up to an extreme event is used for event-based modelling
facility	 A permanent or mobile retail outlet, bulk plant, marina, cardlock/keylock, private outlet or farm where gasoline or an associated product is handled other than in portable containers.
farm	 A private outlet that consists of a tract of land, including all buildings, structures and appurtenances to the land, devoted to the production of crops or the raising of animals, and includes fish hatcheries, ranges and nurseries with growing operations.
FOCALErie	Federation of Conservation Authorities of Lake Erie
farm-animal yard	 Outdoor livestock areas lined with concrete other than those meeting the definition of an outdoor confinement area. Food and water are not provided in farm-animal yards. They are generally used as outdoor exercise areas or holding areas for when barns are being cleaned out, usually in association with a barn/covered structure.
future threat	 Means not existing, as defined in this Source Protection Plan.
Gasoline	 A product of petroleum that may include oxygenates and gasoline
	additives that has a flash point below 37.8 [°] C, that is a liquid at standard temperatures and pressures and that is designed for use in an engine.
GIS	Geographic Information System;
	 Computer based system that has the capability to input, store, retrieve, manipulate, analyze, and output geographically referenced data (Table of Drinking Water Threats Glossary⁵)
GLWQA	Great Lakes Water Quality Agreement
	 An agreement signed in 1978 by the United States and Canada and amended in 1987. Its purpose is to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin ecosystem. (http://binational.net/erie/glossary-e.html)
grazing or pasturing	 Land where animals eat growing herbaceous plants.
groundwater	 Is water that has percolated into the ground and occupies spaces between soil particles or cracks and fissures in otherwise solid rock. (Source: Ministry of the Environment. 2004. White Paper on Watershed-based Source Protection Planning.);
Groundwater Under the Direct Influence	 Means groundwater having incomplete/undependable subsurface filtration of surface water and infiltrating precipitation
-	 Generally used to refer to groundwater that shows physical evidence of surface water contamination or surface water organisms
GUDI	Groundwater Under the Direct Influence of surface water
handling	 Means the storing, transmitting, transporting or distribution of a material, and includes putting them into any container including, but not limited to one in a motor vehicle, watercraft, or trailer as per O. Reg. 217/01 and 213/01.
hazard score	 A score assigned to each combination of circumstances for an activity; the hazard score ranges between 4.1 to 10 for chemical threats, 5 to 10 for pathogens, and 8.3 to 10 for DNAPLs (see Section 7 of the Assessment Report for more details)

Term	Definition and Source
HCCL	Hall Consultant Canada Limited
heat transfer fluid	 The Heat Transfer Fluid used in closed loop system is generally ethanol or propylene glycol.
Highly Vulnerable Aquifer	 Means an aquifer on which external sources have or are likely to have a significant adverse effect, and includes the land above the aquifer (General Regulation 287/07⁵)
HVA	Highly Vulnerable Aquifer
Implementing body	 Can be a provincial ministry, municipality, local board, source protection authority, or other body
INC	Incentives
Intake Protection Zone	 Refers to a surface water intake protection zone
	 surface water intake protection zone means an area that is related to a surface water intake and within which it is desirable to regulate or monitor drinking water threats (General Regulation 287/07⁶)
Intake Protection Zone-1	 Immediate zone of 1 kilometre radius, for a Great Lakes intake, drawn around the intake, until it touches the shore where it extends a certain setback into the land (see Section 4 of the Assessment Report for more details)
Intake Protection Zone-2	• Zone delineated based on a 2 hour travel time to the intake under moderate flow and wind conditions, and extended in-land and up tributaries and creeks that drain to the lake within a 2 hour time of travel to the intake (see Section 4 of the Assessment Report for more details)
Intake Protection Zone-3	 For Great Lakes intakes, this zone includes areas which can contribute contaminants under an extreme event at a concentration which would result in a deterioration of the source water for the purposes of human consumption (see Section 4 of the Assessment Report for more details)
Integrated Pest Management	 A process that uses all necessary techniques to suppress pests effectively, economically and in an environmentally sound manner. IPM employs a two-pronged approach managing the plant environment to prevent problems and using thresholds to decide how and when to treat pests.
Intrinsic susceptibility index	 An index used to assess the vulnerability of groundwater (see Section 4 of the Assessment Report for more details)
IPZ	Intake Protection Zone
IPZ-1	Intake Protection Zone-1
IPZ-2	Intake Protection Zone-2
IPZ-3	Intake Protection Zone-3
ISI	Intrinsic susceptibility index
Issue (or issues)	 A parameter or pathogen shown to deteriorate, or trend towards a deterioration of water quality for use as a source of drinking water (reworded from the Clean Water Act, 2006)
LaMP	Lakewide Management Plans
	 An ecosystem approach to protecting the Great Lakes. They consist of plan of actions to assess, restore, protect and monitor the ecosystem health of a Great Lake. (<u>http://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=0CB6DFA3-1</u>)
large systems (septic)	 Systems with a design flow greater than 10 000 L/day. These systems are subject to approval by the Ministry of Environment.

Term	Definition and Source	
LAWSS	 Lambton Area Water Supply System 	
Legal effect	 The policies in the Source Protection Plan have one of three legal effect – "must conform/comply with" policies, "have rega policies, and "non-legally binding" policies (Source: Conserva Ontario. 2011. Legal Effect of Source Protection Policies.); 	ard to"
livestock	 Includes dairy, beef, swine, poultry, horses, goats, sheep, rai (flightless birds), fur-bearing animals, deer, elk, game animal birds, and other animals identified in the Minimum Distance Separation Guidelines (OMAFRA 2006). 	
LNAPLs	Light non-aqueous phase liquid	
LSCCWCC	Lake St. Clair Canadian Watershed Coordination Council	
Low drinking water threat	 Means a drinking water threat that, according to a risk asses poses or has the potential to pose a low risk (Source: Clean Act, 2006. O Reg. 246/10.) 	
LUP	Land Use Planning	
MAC	Maximum Acceptable Concentrations	
mapping symbology	 Mapping products guidance in a document produced by the Resources Information Program (WRIP) of Ministry of Natura Resources (MNR) to provide guidance and ensure consisten source protection planning mapping products 	al
	 Available at website: <u>https://www.ontario.ca/environment-and energy/mapping-symbology-clean-water-act</u> 	<u>d-</u>
marina	 Any premises at which gasoline or an associated product is dispensed for use as fuel for floating motorized watercraft. 	
Maximum Acceptable Concentrations	 Human health based standards established for parameters v when present above a certain concentration, have known or suspected adverse health effects (MOE, 2006) 	vhich
mine	 Based on definitions from the Ontario Mining Act, a mine refe 	ers to:
	 (a) any opening or excavation in, or working of, the ground for purpose of mining any mineral or mineral bearing substance. 	
	 (b) all ways, works, machinery, plant, buildings and premises or above the ground relating to or used in connection with the referred to in clause (a), 	
	 (c) any roasting or smelting furnace, concentrator, mill, work used for or in connection with washing, crushing, grinding, si reducing, leaching, roasting, smelting, refining or treating any or mineral bearing substance, or conducting research on the 	fting, y mineral
	 (d) tailings, waste rock, stockpiles of ore or other material, or other prescribed substances, or the lands related to any of th 	
	 (e) mines that have been temporarily suspended, rendered in closed out or abandoned, 	nactive,
	 Quarry and Aggregate are defined under the Aggregate Res Act and not included within the scope of the Ontario Mining A 	
MISA	 Municipal Industrial Strategy for Abatement 	
MNR, MNRF	 Ontario Ministry of Natural Resources 	
	 Ontario Ministry of Natural Resources and Forestry 	
	 Provincial ministries may be realigned from time to time and references to MNR are intended to be a generic reference to ministry having responsibilities for natural resources and as may be a reference to any one of the past or future ministries that responsibility. 	such

Term	Definition and Source
MOE, MOECC, MOEE	Ontario Ministry of Environment
	Ontario Ministry of Environment and Climate Change
	 Ontario Ministry of Environment and Energy
	• Provincial ministries may be realigned from time to time and references to MOE are intended to be a generic reference to the ministry having responsibilities for the environment and such may be a reference to any one of the past or future ministries having that responsibility.
moderate drinking water threats	 Generally refer to prescribed activities deemed moderate drinking water threats, based on the risk score (see Section 7 of the Assessment Report for more details)
МТО	Ontario Ministry of Transportation
	 Provincial ministries may be realigned from time to time and references to MTO are intended to be a generic reference to the ministry having responsibilities for transportation and as such may be a reference to any one of the past or future ministries having that responsibility.
NASM	Non-agricultural Source Material
non-agricultural source material	 Has the same meaning as in section 1 of O. Reg. 276/03 (General) made under the Nutrient Management Act, 2002 (Table of Drinking Water Threats Glossary⁵)
	 Includes yard waste, fruit and vegetable peels, food processing waste, pulp and paper biosolids and sewage biosolids (See website http://www.omafra.gov.on.ca/english/nm/nasm.html)
NASM application area	 Means the part or parts of the land of a farm unit to which NASM is applied.
NASM Plan	 A nutrient management plan for the management of NASM and other nutrients that may be applied to NASM application areas or stored in NASM storage facilities.
NASM Plan area	 A NASM application area together with any associated NASM storage facility on the same farm unit.
NASM storage facility	 Means a permanent nutrient storage facility or temporary field nutrient storage site that: (a) is used to store NASM, and
	 (b) is not subject to a certificate of approval or provisional certificate of approval under Part V of the Environmental Protection Act.
NMA	Nutrient Management Act
NMP	Nutrient Management Plan
NMS	Nutrient Management Strategy
non-permitted	 Referring to water use (or taking) which does not require a Permit to Take Water. Domestic use or livestock watering does not require a permit. Similarly use which involves the taking less than 50,000 litres of water in a day does not require a permit (see Section 4 of the Assessment Report for more details)
nutrients	 Materials that can be applied to land for the purpose of improving the growth of agricultural crops and for soil conditioning.
Nutrient Management Plan	 A plan that outlines how nutrients are to be applied to given land base. These NMP are required for: a. Farms generating more than 300 Nutrient Units annually; b. Farms located within 100 m of a municipal well

Term	Definition and Source
Nutrient Management Strategy	 Sets out an environmentally acceptable method of managing all prescribed materials generated at an agricultural operation. A NMS is required for:
	 Farms generating more than 300 NU;
	 Farms generating >5 Nu if: An earthen lagoon is constructed, Building permit application to construct or expand barns used for housing livestock or other structures for storage of manure.
	 If there is a regulated mixed anaerobic digester on farm
Nutrient Unit	 A nutrient unit is equal to the amount of manure needed to give the fertilizer replacement value of the lower of 43 kg of N or 55 kg of P.
OCA	Outdoor confinement area
OG	Operational Guidelines
OGS	Ontario Geologic Survey
OMAFRA, OMAF	 Ontario Ministry of Agriculture, Food and Rural Affairs
	 Ontario Ministry of Agriculture and Food
	 Provincial ministries may be realigned from time to time and references to OMAFRA are intended to be a generic reference to the ministry having responsibilities for agriculture and as such may be a reference to any one of the past or future ministries having that responsibility.
OP	Official Plan
open looped system	 An open looped system is one type of earth energy heat pump systems. In these systems groundwater pumped from a well or a series of wells is circulated through a heat pump located inside the building. This system also cools by extracting heat from the air inside the building and transferring it to the water circulating through the system. The system then injects the water back into the aquifer through a well or discharges it to a stream, river, lake or pond.
Operational Guidelines	 Objectives established for parameters that, if not controlled, may negatively affect the efficient and effective treatment, disinfection and distribution of the water
	 Examples are alkalinity and hardness (see Section 5 of the Assessment Report for more details)
other activities	 Activities that are not one of the 21 prescribed activities, but which may be considered drinking water threats if they meet certain criteria (see Section 7 of the Assessment Report for more details)

Term	Definition and Source
Outdoor Confinement Areas	 A yard , facility, or enclosure (for livestock, deer, elk or game animals) with a very high animal concentration, typically 15 + animals per acre, often for extended periods of time. Ontario Regulation 267/03 made pursuant to the Nutrient Management Act defines outdoor confinement areas as follows: a. It has no roof, except as described below (#3); b. It is composed of fences, pens, corrals or similar structures; c. It may contain a shelter to protect the animals from the wind or another shelter with a roof of an area of less than 20 square metres; d. It has permanent or portable feeding or watering equipment; e. The animals are fed or watered at the enclosure; f. The animals may or may not have access to other buildings or structures for shelter, feeding or watering; and, g. Grazing and foraging provides less than 50 per cent of dry matter intake.
OWRA	Ontario Water Resources Act
parameter	 A physical, chemical or radioactive substance that may be considered as an issue if listed in Schedule 1, 2, 3 or Table 4 (see Section 5 of the Assessment Report for more details)
pathogen	 Means a microscopic organism capable of producing infection or infectious disease in humans (Table of Drinking Water Threats Glossary⁵)
	 Pathogens may be considered as issues (see Section 5 of the Assessment Report for more details)
PCBs	 Polychlorinated biphenyls. A group of toxic, persistent chemicals used in transformers and capacitors. They often accumulate in sediments, fish, and wildlife and have been associated with health problems (http://binational.net/erie/glossary-e.html)
percent water demand	 A calculation made to determine the potential (significant, moderate or low) of water quantity stress of a subwatershed (see Section 3 of the Assessment Report for more details)
pesticide	 The Pesticides Act defines pesticide as any organism, substance or thing that is manufactured, represented, sold or used as a means of directly or indirectly controlling, preventing, destroying, mitigating, attracting or repelling any pest or altering the growth, development or characteristics of any plant life that is not a pest and includes any organism, substance or thing registered under the federal Pest Control Products Act.
petroleum hydrocarbons	 The sources of petroleum hydrocarbons include the disposal of used oil and other fluids on the ground or into storm drains, spills of gasoline or oil, and leaks of oil and other fluids from vehicles, hydraulic oil at industrial sites, runoff from residential car washing.
petroleum aromatic hydrocarbons	 These chemicals can be found in vehicle exhaust, coal tar-based sealants used on paved roads and parking lots, and creosote treated wood.
PGMN	 Provincial Groundwater Monitoring Network An MOE ambient groundwater quality monitoring program with participation from conservation authorities
PI	Prescribed Instrument
potential for stress	 Determined through the percent water demand, this is an indication of the possible water quantity stress of a subwatershed (see Section 3 of the Assessment Report for more details)

Term	Definition and Source
prescribed activities	 21 activities prescribed as drinking water threats for the purpose of the definition of "drinking water threat" in subsection 2 (1) of the Clean Water Act (General Regulation 287/07⁶)
Prescribed Instrument	 Is any document of legal effect, including a permit, license, approval, authorization, direction or order, that is issued or otherwise created under an Act and listed in Section 1.0.1 of Regulation 287/07
pre-wetting	 A technique that involves spraying liquid salt brine onto the solid salt in order to keep the salt on the road and increasing the speed of melt action.
private outlet	 A private outlet is any premises, other than a retail outlet, where gasoline or an associated product is put into fuel tanks of motor vehicles or floating motorized watercraft or into portable containers.
PTTW	Permit To Take Water
	 A permit required under the Ontario Water Resources Act if the water taking is more than 50,000 liters per day (Ontario Water Resources Act, website: <u>http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o40_e.htm#BK51</u>) <u>http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o40_e.htm#BK55</u>
PUC	Public Utilities Commission
	 A Municipality commission that is responsible for water and wastewater services
PWQMN	Provincial Water Quality Monitoring Network
	 An MOE in-land surface water quality monitoring program with participation from conservation authorities
quarry	 The Aggregate Resources Act defines "quarry" to mean land or land under water from which consolidated aggregate is being or has been excavated, and that has not been rehabilitated, but does not mean land or land under water excavated for a building or structure.
RAP	Remedial Action Plan
	 Established under the Great Lakes Water Quality Agreement to focus on Areas of Concern (AOC)
reserve	 Has the same meaning as in the Indian Act (Canada) (General Regulation 287/07⁶)
retail outlet	 A retail outlet is any premises to which the public is invited, at which gasoline or an associated product is sold and is put into fuel tanks of motor vehicles, floating motorized watercraft or into portable containers.
Risk or risks	 Generally an indication of the likelihood and consequences of an occurrence. In the case of drinking water quality, it refers to the likelihood and severity of human health related concerns resulting from drinking water threats Risk score provides a relative indication of risk
Risk Management	 Means a risk management inspector appointed under Part IV of the
Inspector	Clean Water Act, 2006 (Source: Clean Water Act, 2006.)
Risk Management Official	 Means the risk management official appointed under Part IV of the Clean Water Act, 2006 (Source: Clean Water Act, 2006.)
Risk Management Plan	 Means a plan for reducing a risk prepared in accordance with the regulations and the rules of the Clean Water Act, 2006 (Source: Clean Water Act, 2006.);

Term	Definition and Source
risk score	 Obtained by multiplying vulnerability score by hazard score for most types of threats; helps determine if a threat is significant, moderate or low (see Section 7 of the Assessment Report for more details)
RLU	Restricted Land Use
RMI	Risk Management Inspector
RMO	Risk Management Official
RMP	Risk Management Plan
RSC	Record of Site Condition
	 Document that must be filed in the Environmental Site Registry to protect property owners from environmental cleanup orders (See website: <u>http://docs.ontario.ca/documents/1015-rsc- handbook.html#document/p1</u>
rules	 This is used throughout the document as an informal reference to the rules contained in the Ministry of the Environment document titled "Technical Rules: Assessment Report" as amended from time to time, and made under section 107 of the Clean Water Act, 2006 (Table of Drinking Water Threats Glossary⁵)
SAAT	Surface to aquifer advection time
	 An index used to assess the vulnerability of groundwater (see Section 4 of the Assessment Report for more details)
Sanitary sewer	 A sewer for collection and transmission of domestic, commercial, institutional and industrial sewage or any combination.
SAR	Species at Risk
	 As per the Species at Risk Act (See website: <u>http://www.sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1</u>), assigned a status such as extinct or endangered
Schedule 1 parameters	 Microbiological drinking water quality standards listed in Regulation 169/03⁷ of the Safe Drinking Water Act, 2002
	 Indicator microorganisms tested in raw (untreated) source water, treated water and in distribution systems to indicate bacterial contamination (see Section 5 of the Assessment Report for more details)
Schedule 2 parameters	 Chemical drinking water quality standards listed in Regulation 169/03⁷ of the Safe Drinking Water Act, 2002
	 Chemical substances such as lead, nitrate and atrazine tested in treated drinking water (see Section 5 of the Assessment Report for more details)
Schedule 3 parameters	 Radiological drinking water quality standards listed in Regulation 169/03⁷ of the Safe Drinking Water Act, 2002
	 Radio-active material such as uranium-235 tested in treated drinking water (see Section 5 of the Assessment Report for more details)
SCRSPA	St. Clair Region Source Protection Area
SDWA	Safe Drinking Water Act, 2002
	 An Act that, among other things, governs the treatment and distribution of drinking water
Section 57	Section 57 of the Clean Water Act (prohibition)
sewershed	 The area of a municipality served by a given sewer network. For example, the area tributary to a given combined sewer overflow or a given Water Pollution Control Plant (WPCP) would be termed the sewershed tributary to the overflow or WPCP.

Term	Definition and Source
SGRA	Significant Groundwater Recharge Areas
Significant Groundwater Recharge Areas	 Means an area within which it is desirable to regulate or monitor drinking water threats that may affect the recharge of an aquifer (General Regulation 287/07⁶)
significant risk	 The risk score which corresponds to a threat being significant (greater than 80)
significant threat and/or significant drinking water threat	 Significant drinking water threat means a drinking water threat that, according to a risk assessment, poses or has the potential to pose a significant risk (Clean Water Act, 2006¹)
small systems (septic)	 Systems with a design flow of less than or equal to 10 000 L/day. These systems are subject to approval under the Ontario Building Code.
SOLRIS	 Southern Ontario Land Resource Information System
Source Protection Authority	 Means a conservation authority or other person or body that, under Subsection 4 (2) or Section 5, is required to exercise and perform the powers and duties of a drinking water source protection authority under the Clean Water Act, 2006.
Source Protection Committee	 Means a drinking water source protection committee established under Section 7 (Clean Water Act, 2006¹)
Source Protection Plan	 Means a drinking water source protection plan prepared under the Clean Water Act (Clean Water Act, 2006¹)
	 contains policies to reduce the threats (identified in the Assessment Report) to drinking water sources
Source Protection Region	 Means a drinking water source protection region established by the regulations (Source: Clean Water Act, 2006.)
SPA	Source Protection Area
	 Means a drinking water source protection area established by Subsection 4 (1) or by the regulations (Clean Water Act, 2006¹)
	 See Section 1 of the Assessment Report for the SPAs within the Thames-Sydenham and Region.
SPC	Source Protection Committee
SPP	Source Protection Plan
SPR	 Source Protection Region; means a drinking water source protection region established by the regulations (Clean Water Act, 2006¹)
SGRA	Significant Groundwater Recharge Area
storm sewershed	 Areas drained by storm sewers (pipes/drains) and catch basins
storm sewer system	 Storm sewers (pipes/drains)), catch basins and outlets that drain a storm sewershed
stress	 Calculated using the percent water demand as required by the Technical Rules: Assessment Reports³
	 Discussed in Section 4 of the Assessment Report
stress assessment	 Process for determining the potential for stress in a subwatershed or local area.
	Uses percent water demand
	Discussed in Section 4 of the Assessment Report
subwatershed	 An area that is drained by a tributary or some defined portion of a stream (Technical Rules: Assessment Report³)
	Part of a watershed

Term	Definition and Source
Surface to well advection time	 An index used to assess the vulnerability of groundwater (see Section 4 of the Assessment Report for more details)
SWAT	Surface to well advection time
Table 4 parameters	 A list of Aesthetic Objectives (AO) established for parameters that may impair the taste, odour or colour of water or which may interfere with good water quality control practices (MOE, 2006)
tables of drinking water threats	 Means the Ministry of the Environment publication "Table of Drinking Water Threats: Clean Water Act, 2006" dated December 12, 2008, as amended from time to time (Technical Rules: Assessment Report³)
	 Contain list of prescribed activities that may pose a threat to drinking water quality and the circumstances under which the threat might be significant, moderate or low
technical rules	 This is used throughout the document as an informal reference to the rules contained in the Ministry of the Environment document titled "<i>Technical Rules: Assessment Report</i>" as amended from time to time, and made under Section 107 of the Clean Water Act, 2006 (Table of Drinking Water Threats Glossary⁵)
Technical Rules: Assessment Report	 Ministry of the Environment document titled "Technical Rules: Assessment Report" as amended from time to time, and made under Section 107 of the Clean Water Act, 2006 (Table of Drinking Water Threats Glossary⁵)
	 Set of rules that provide technical guidance for the preparation of the assessment report
Technical Standards and Safety Authority (TSSA)	 TSSA is a not-for-profit, self-funded corporation that administers and enforces public safety laws under the province's Technical Standards and Safety Act, 2000.
temporary storage	 Storage in a facility that is temporary and therefore the facility has not received approvals (such as, but not limited to a building permit, site plan approval or Prescribed Instrument) which would or could require the facility to be designed and constructed in such a way to mitigate the threat to drinking water. Storage for the purposes of application on that site within a 24 hr period is not considered to be storage, but a part of the application.
threat	Refers to a drinking water threat
	 An activity (land use) that poses a threat to drinking water quality or quantity
TPDP	Threat policy discussion paper
transport pathway	 Natural or anthropogenic features such as drains, creeks, water and oil wells, which may increase vulnerability by forming a shorter or direct path for contaminants to the source water
TSR	Thames-Sydenham and Region Source Protection Region
underground tank	 A tank that is buried or partially buried that is in direct contact with earth or backfill
uncertainty	 Refers to the uncertainty level of vulnerability assessment, determined according to the Technical Rules (Technical Rules: Assessment Report³)

Term	Definition and Source
untreated septage	As outlined in O. Reg. 347 untreated septage is defined as:
	 A domestic waste that is human body waste, toilet or other bathroom waste, waste from other showers and tubs, liquid or water borne culinary or sink waste or laundry waste,
	 Other waste that is suitable for storage, treatment or disposal in a sewage system regulated under Part 8 of the building code made under the Building Code Act, 1992, if the waste is not fully disposed of at the site where it is produced, other than, Waste from sewage works approved under Section 53 of the Ontario Water Resources Act Waste in a vehicle sewage holding tank
USGS	United States Geological Survey
UT	Upper Thames
vulnerability	 A measure of how easily contaminants may reach a surface water intake, or penetrate the ground to reach the aquifer supplying a well
vulnerability score	 A score assigned to a vulnerable area, with a higher score indicating a higher vulnerability (see Section 4 of the Assessment Report for more details)
vulnerable area	 Intake Protection Zone, Wellhead Protection Area, Highly Vulnerable Aquifer and Significant Groundwater Recharge Areas (Clean Water Act, 2006¹)
waste	 Waste is defined under S. 25 of the Environmental Protection Act as ashes, garbage, refuse, domestic waste, industrial waste or municipal refuse and other materials designated in the regulation.
waste disposal site	 Under S.25 of the Environmental Protection Act, a waste disposal site is defined as: Any land upon, into, in or through which or building or structure in which, waste is deposited, disposed of, handled, stored, transferred, treated or processed Any operation carried out or machinery or equipment used in connection with the depositing, disposal, handling, storage, transfer, treatment or processing
watershed	 Area of land that drains into a water body or watercourse.
well	 A well is defined in Section 1 of Ontario Water Resources Act as a hole made in the ground to locate or obtain groundwater or to test or to obtain information in respect of groundwater or an aquifer, and includes a spring around or in which works are made or equipment is installed for collection or transmission of water and that is or is likely to be used as a source of water for human consumption.
Wellhead Protection Area	 Means an area that is related to a wellhead and within which it is desirable to regulate or monitor drinking water threats (General Regulation 287/07⁶)
	 One of the four vulnerable areas to be delineated under the Clean Water Act, comprised of WHPA-A, WHPA-B, WHPA-C, WHPA-D, and in certain cases, may also be comprised of WHPA-E and WHPA-F
WHPA	Wellhead Protection Area
WHPA-A	Wellhead Protection Area-A
	 100 m fixed radius around each well (see Section 4 of the Assessment Report for more details)

Term	De	efinition and Source
WHPA	-В ө	Wellhead Protection Area-B
	•	2 year time of travel to the well, excluding the area of WHPA-A (see Section 4 of the Assessment Report for more details)
WHPA	-C •	Wellhead Protection Area-C
	•	2 to 5 year time of travel to the well (see Section 4 of the Assessment Report for more details)
WHPA	-D •	Wellhead Protection Area-D
	•	5 to 25 year time of travel to the well (see Section 4 of the Assessment Report for more details)
WHPA	-E •	Wellhead Protection Area-E
	•	delineated if shown that a surface water system influence effectively bypasses the aquifer's protection (see Section 4 of the Assessment Report for more details)
WHPA	-F •	Wellhead Protection Area-F
	•	Delineated if the well is subject to issues, which originate from outside the other parts of the Wellhead Protection Area (see Section 4 of the Assessment Report for more details)
WWIS	•	Water Well Information System
ZBL		Zoning By-Law
Notes:		
1.	Clean Water Act (2006): ht	tp://www.e-
		s/english/elaws_statutes_06c22_e.htm
2.	MOE. Technical Support D Guidelines. 2006	ocument for the Ontario Drinking Water Standards, Objectives and
3.		ent Report: http://www.ontario.ca/environment-and-energy/technical-
0.	rules-assessment-report	she report. http://www.ontano.ou/environment and energy/teormour
4.		sion. http://www.ijc.org/rel/boards/annex2/buis.htm
5.		
		envision/env_reg/er/documents/2009/010-7573%202.pdf
6.		(Clean Water Act, 2006): http://www.e-
7		nglish/elaws regs 070287 e.htm
7.		rinking Water Act, 2002): <u>http://www.e-</u> nglish/elaws_regs_030169_e.htm
	iaws.gov.on.ca/ntmi/regs/e	ngiisi/eiaws_regs_030108_e.nim
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