
2. Definitions & Clarifications

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CHAPTER DESCRIPTION

This chapter defines, clarifies and describes the terms used in the **Wells Regulation** and the *Ontario Water Resources Act* that are used in this manual. Other key terms used in this manual, which are not used in the **Wells Regulation** and the *Ontario Water Resources Act*, are described in the glossary.

RELEVANT SECTIONS – THE WELLS REGULATION



Definitions – Section 1

RELEVANT SECTIONS – ADDITIONAL REGULATIONS OR LEGISLATION

- *Ontario Water Resources Act*, R.S.O. 1990, Chapter 0.40 – Sections 1, 35(1), 35(2)
- *Environmental Protection Act*, S.O. 1999, Chapter 33
- *Safe Drinking Water Act*, S.O. 2002, Chapter 32
- Regulation 169/03 as amended (Ontario Drinking Water Quality Standards) *Safe Drinking Water Act*, S.O. 2002, Chapter 32
- *Building Code Act*, S.O. 1992, Chapter 23
- Regulation 350/06 as amended (Building Code) made under the *Building Code Act*, S.O. 1992, Chapter 23
- *Nutrient Management Act*, S.O. 2002, Chapter 4
- *Labour Relations Act*, S.O. 1995, Chapter 1
- *Agricultural Employees Protection Act*, S.O. 2002, Chapter 16

KEY DEFINITIONS AND DESCRIPTIONS

TABLE 2-1: TERMS AND DEFINITIONS FOUND IN THE WELLS REGULATION SECTION 1, AND THE ONTARIO WATER RESOURCES ACT

Term	Definition	Further clarification
Agency	The Ontario Clean Water Agency	Subsection 1(1) of <i>Ontario Water Resources Act</i>
Air Vent	An outlet at the upper end of the casing that allows for equalization of air pressure between the inside of the casing and the atmosphere and for the release of gases from the well	Subsection 1(1) of the Wells Regulation
Analyst	An analyst appointed under the <i>Environmental Protection Act</i>	Subsection 1(1) of <i>Ontario Water Resources Act</i>
Annular Space	An open space between a casing or well screen and the side of a well, and includes space between overlapping casings within the well	Subsection 1(1) of the Wells Regulation For the purposes of this manual the term “annulus” has the same meaning as annular space.
Aquifer	A water-bearing formation that is capable of transmitting water in sufficient quantities to serve as a source of water supply	Subsection 1(1) of the Wells Regulation See “Useful Aquifer” in Table 2-2 An “aquifer” is not dependent on the yield of water from a well. Instead, an “aquifer” is determined by its ability to transmit enough water into a particular well that yields a sufficient quantity for the user.
Assistant Well Technician	A person who works at the construction of wells as an employee or agent of the holder of a well contractor licence under the supervision of the holder of a well technician licence	Subsection 1(1) of the Wells Regulation

Term	Definition	Further clarification
Authorizing Certificate	Has the same meaning as in subsection 2 (1) of the <i>Ontario Labour Mobility Act</i> , 2009, S.O. 2009, c. 24	<p>Subsection 1(1) of the Wells Regulation</p> <p>Subsection 2 (1) of the <i>Ontario Labour Mobility Act</i>, 2009, S.O. 2009, c. 24 states:</p> <p>“authorizing certificate”, in relation to an occupation, means,</p> <p>(a) a certificate, licence, registration, or other form of official recognition, granted by a regulatory authority to an individual, which attests to the individual being qualified to practise the occupation and authorizes the individual to practise the occupation, use a title or designation relating to the occupation, or both, or</p> <p>(b) a certificate, licence, registration, or other form of official recognition, granted by a regulatory authority to an individual, which attests to the individual being qualified to practise the occupation but does not authorize the practice of the occupation or the use of a title or designation relating to the occupation, if the occupation and the regulatory authority granting the certificate, licence, registration or other form of official recognition respecting the occupation are prescribed for the purpose of this clause.</p>
Bedrock	<p>(a) The solid rock underlying unconsolidated material such as gravel, sand, silt and clay, or</p> <p>(b) solid rock that is exposed at the ground surface</p>	<p>Subsection 1(1) of the Wells Regulation</p> <p>This excludes glacial erratics or boulders as they are loose and unstratified and considered to be overburden.</p> <p>In Ontario, overburden is generally underlain by bedrock.</p>

Term	Definition	Further clarification
Bentonite	<p>A commercially produced sealing material used in well construction or abandonment that,</p> <ul style="list-style-type: none"> (a) consists of more than 50 percent sodium montmorillonite by weight, (b) has the ability to swell in the presence of water, (c) does not provide nutrients for bacteria, and (d) does not impair the quality of water with which it comes in contact 	Subsection 1(1) of the Wells Regulation
Casing	Pipe, tubing or other material installed in a well to support its sides, but does not include a well screen	Subsection 1(1) of the Wells Regulation
Chlorinated	Disinfected with free chlorine residual	Subsection 1(1) of the Wells Regulation
Construct	When used with respect to a well, means bore, dig, drill or otherwise make, extend or alter. Construct also includes installing equipment in or connected to a well	<p>Subsections 35(1) and 35(2) of the <i>Ontario Water Resources Act</i></p> <p>An alteration includes the installation of a pump and associated pumping equipment in or connected to a well.</p> <p>Well abandonment is not considered to be well construction (see the description for “Well Abandonment” in Table 2-2).</p>
Crown	Her Majesty the Queen in right of Ontario	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Dewatering Well	<p>A well that is not used or intended for use as a source of water for agriculture or human consumption and that is made:</p> <ul style="list-style-type: none"> (a) to lower or control the level of groundwater in the area of the well, or (b) to remove materials that may be in the groundwater 	<p>Subsection 1(1) of the Wells Regulation</p> <p>Removal of materials could include a pump and treat well system that is removing contaminated groundwater from an aquifer.</p>

Term	Definition	Further clarification
Director	A Director appointed under section 5	Subsection 1(1) of the <i>Ontario Water Resources Act</i> Subsection 5(1) of the <i>Ontario Water Resources Act</i> for the purposes of the Wells Regulation
Discharge	When used as a verb, includes add, deposit, emit or leak and, when used as a noun, includes addition, deposit, emission or leak	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Flowing Well	A well that has a static water level above the ground surface	Subsection 1(1) of the Wells Regulation
Holder	When used in reference to a licence, permit or approval, means a person who is bound by the licence, permit or approval	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Inspection	Includes an audit, examination, survey, test and inquiry	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Justice	A provincial judge or a justice of the peace	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Land	Includes any estate, term, easement, right or interest in, to, over or affecting land	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Mineralized Water	Water containing in excess of 6,000 mg/L total dissolved solids or 500 mg/L chlorides or 500 mg/L sulphates	Subsection 1(1) of Wells Regulation
Minister	The Minister of the Environment	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Ministry, or MOECC	The Ministry of the Environment and Climate Change	Subsection 1(1) of the <i>Ontario Water Resources Act</i>

Term	Definition	Further clarification
Minor Alteration	<p>With respect to a well,</p> <ul style="list-style-type: none"> (a) routine repair or maintenance, (b) the installation of monitoring, sampling or testing equipment, other than equipment used to test the yield of the well or the aquifer, (c) the installation of a pump in a test hole, or (d) the installation of a well cap or watertight well cover 	<p>Subsection 1(1) of the Wells Regulation</p> <p>See the description for “Routine Repair” in Table 2-2.</p>
Natural Environment	<p>Has the same meaning as in the <i>Environmental Protection Act</i></p>	<p>Subsection 1(1) of the <i>Ontario Water Resources Act</i></p> <p>Subsection 1(1) of the <i>Environmental Protection Act</i> states:</p> <p>“natural environment” means the air, land and water, or any combination or part thereof, of the Province of Ontario.</p> <p>Section 2 of the <i>Environmental Protection Act</i> states:</p> <p>A contaminant that is discharged into the air within a building or structure as a result of the discharge of the same or another contaminant in another building or structure shall be deemed to be discharged into the natural environment by the owner or the person who has the charge, management or control of the contaminant discharged in the other building or structure.</p>
Occupation	<p>Has the same meaning as in subsection 2 (1) of the <i>Ontario Labour Mobility Act</i>, 2009, S.O. 2009, c. 24</p>	<p>Subsection 1(1) of Wells Regulation</p> <p>Subsection 2 (1) of the <i>Ontario Labour Mobility Act</i>, 2009, S.O. 2009, c. 24 states:</p> <p>“occupation” means a set of jobs which, with some variation, are similar in their main tasks or duties or in the type of work performed</p>

Term	Definition	Further clarification
Out-of-province Regulatory Authority	Has the same meaning as in subsection 2 (1) of the <i>Ontario Labour Mobility Act</i> , 2009, S.O. 2009, c. 24	Section 1(1) of the Wells Regulation Subsection 2 (1) of the <i>Ontario Labour Mobility Act</i> , 2009, S.O. 2009, c. 24 states: “out-of-province regulatory authority” means a regulatory authority that is authorized to certify individuals in an occupation under an Act of Canada or of a province or territory of Canada that is a party to the Agreement on Internal Trade, other than Ontario
Overburden	Unconsolidated material overlying bedrock	Subsection 1(1) of the Wells Regulation
Person Constructing a Well	A well technician or other individual who works at the construction of the well, and a well purchaser is not a person constructing a well.	Subsection 1(2) of the Wells Regulation
Province	The Province of Ontario	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Provincial Officer	A person who is designated under Section 5	Subsection 1(1) of the <i>Ontario Water Resources Act</i> Subsection 5(3) of the <i>Ontario Water Resources Act</i> for the purposes of the Wells Regulation

Term	Definition	Further clarification
Pump	Includes associated pumping equipment.	<p>Subsection 1(1) of the Wells Regulation</p> <p>Equipment includes any equipment installed into or onto a well that is integral to the pumping of the well water</p> <p>Associated pumping equipment can include:</p> <ul style="list-style-type: none"> • all the parts of a pump installed in a well • waterlines (sometimes called lateral pipes and drop pipes) and their associated parts in or attached to the well • pitless adapters and pitless units • sanitary well seals, and • electrical lines to operate a pump <p>In some cases if a pump part is attached to the well cap or cover, the well cap or cover could also be associated pumping equipment.</p>
Regulated Person	<p>(a) A person who belongs to a class of persons prescribed by the regulations and who holds or is required to hold,</p> <p style="padding-left: 20px;">(i) an approval, licence or permit under this Act, or</p> <p style="padding-left: 20px;">(ii) a certificate of approval, provisional certificate of approval, certificate of property use, licence or permit under the <i>Environmental Protection Act</i>, or</p> <p>(b) a corporation that belongs to a class of corporations prescribed by the regulations</p>	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Regulations	The regulations made under this act	Subsection 1(1) of the <i>Ontario Water Resources Act</i>

Term	Definition	Further clarification
Sealant	<p>(a) a slurry consisting of clean water and at least 20 percent bentonite solids by weight, or</p> <p>(b) other material that is equivalent to a slurry described in clause (a) with respect to the ability to form a permanent watertight barrier</p>	<p>Subsection 1(1) of the Wells Regulation</p> <p>For the purposes of this manual the term “grout” has the same meaning as suitable sealant.</p> <p>See also, definitions of “Clean” and “Watertight” in Table 2-2.</p> <p>An approved material for sealant has to be a material that can provide as much of a permanent watertight barrier as the approved bentonite mixture in the environment the sealant will be used.</p> <p>In problematic environments where bentonite is not sufficiently watertight, the definition of sealant could allow for other materials to be sands or gravels in a well’s annular space. However, the annular space must be sealed with a material that prevents any movement of water, natural gas, contaminants or other material between the subsurface formations, aquifers and/or ground surface and performs like (a) in a non-problematic environment.</p> <p>In this case, other material could include but is not limited to the following:</p> <ul style="list-style-type: none"> • concrete or cement slurry, • a layer or layers of concrete or cement with layers of clays, silts, sands, gravels, or other materials, • a layer or layers of clays, silts, sands, gravels and drill cuttings, and/or • a mechanical device such as a neoprene packer.

Term	Definition	Further clarification
		If the material is something other than a slurry consisting of clean water and at least 20 percent bentonite solids by weight, the material must form a watertight barrier that is equivalent to the bentonite/water slurry at the time the bentonite/slurry mixture is fully cured
Static Water Level	The level attained by water at equilibrium in a well when no water is being taken from the well	Subsection 1(1) of the Wells Regulation In equilibrium with the atmosphere. Also requires that no water is being added to the well.
Subsurface Formation	Includes an aquifer	Subsection 1(1) of the Wells Regulation
Suitable Sealant	A sealant that is compatible with the quality of the water found in the well	Subsection 1(1) of the Wells Regulation For the purposes of this manual the term “grout” has the same meaning as suitable sealant. See also definition of “Sealant” and “Bentonite” in this table.
Test Hole	A well that, (a) is made to test or to obtain information in respect of groundwater or an aquifer, and (b) is not used or intended for use as a source of water for agriculture or human consumption	Subsection 1(1) of the Wells Regulation For further clarification see the term “well” below in Table 2-1.
Tremie Pipe	A pipe or tube with an inner diameter that is at least three times the diameter of the largest particle of material to pass through it and that is used to conduct material to the bottom of a hole, including a hole containing standing water	Subsection 1(1) of the Wells Regulation When used, a tremie pipe includes a float shoe or other similar devices if they are used to conduct material to the bottom of a hole. For clarification with respect to a tremie pipe, a pipe or tube means a long, hollow (empty space) cylinder.
Tribunal	Means the Environmental Review Tribunal	Subsection 1(1) of the <i>Ontario Water Resources Act</i>

Term	Definition	Further clarification
Waters	A well, lake, river, pond, spring, stream, reservoir, artificial watercourse, intermittent watercourse, groundwater or other water or watercourse	Subsection 1(1) of the <i>Ontario Water Resources Act</i>
Well	A hole made in the ground to locate or to 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	<p>Subsection 1(1) of the <i>Ontario Water Resources Act</i></p> <p>There are three parts to the definition:</p> <ol style="list-style-type: none"> 1) a hole used to locate or obtain groundwater is a well 2) a hole to test or obtain information with respect to groundwater or an aquifer is a well 3) a spring (natural groundwater discharge at ground surface) where works or equipment are installed and where the water will, or is likely to be used for human consumption is a well. <p>The Wells Regulation exempts certain types of wells. The exempt wells are: trench, pond, ditch, reservoir, lagoon, artificial wetland, canal, tile drain and wick drain. See descriptions of these terms in Table 2-2.</p> <p>If a hole is advanced or excavated to test or obtain information with respect to an aquifer or groundwater but the hole does not locate groundwater (i.e., a dry hole), the hole is still considered a well.</p> <p>If a hole is made for the sole purpose of overburden and bedrock observations, with no direct or indirect observations regarding the presence or absence of any groundwater, the hole is not a well.</p> <p>If a hole is made below a surface water body for the sole purpose of sediment, overburden and bedrock observations, the hole is not a well.</p> <p>When dealing with earth energy (geothermal) systems it is important to consider the following:</p>

Term	Definition	Further clarification
		<ul style="list-style-type: none"> • In a geothermal system identified as an open loop system (or aquifer thermal energy storage system), groundwater is usually taken from a hole into a heat exchanger or heat pump. This hole meets the definition of a “well.” • If water is discharged back from the heat exchanger or pump to the aquifer through another hole, then the hole is also considered a “well.” Sometimes the same hole is used to take groundwater and discharge the water back into the aquifer in an open loop system. This hole meets the definition of a “well.” • If the hole is advanced or excavated to locate or obtain groundwater but the hole does not locate groundwater (i.e., a dry hole), the hole is still considered a “well.” • If the earth energy (geothermal) system is considered a closed loop system and a person conducts a test (including a short duration pumping test or hydraulic conductivity test) on the groundwater in the hole, then the hole is a “well.” In some cases a test may include a small pumping test to determine if the rate of groundwater flow during drilling or development will exceed 50,000 litres per day, and to ensure compliance with the Permit To Take Water requirements found in Section 34 of the <i>Ontario Water Resources Act</i>. • Some earth energy (geothermal) closed loop systems use groundwater to transfer (i.e., conduct) energy to and from the heat transfer fluid. If the person is looking for, or obtaining information about, groundwater in the holes, for these systems, then the

Term	Definition	Further clarification
		<p>holes are considered “wells.”</p> <ul style="list-style-type: none"> For further information on earth energy (geothermal) systems please see the technical bulletin titled <i>Constructing Earth Energy Systems in Ontario</i> on Ontario.ca.
Well Contractor Licence	A licence referred to in section 39	<p>Subsection 35(1) of the <i>Ontario Water Resources Act</i></p> <p>A licence issued by the Director that authorizes the holder to engage in the business of constructing wells.</p> <p>See Chapter 3: <i>Well Construction Licences: Obtaining, Maintaining & Exemptions.</i></p>
Well Technician Licence	A licence referred to in section 43	<p>Subsection 35(1) of the <i>Ontario Water Resources Act</i></p> <p>A well technician licence is a licence of a prescribed class issued by the Director that authorizes the holder to work at the construction of wells.</p> <p>There are five different classes of well technician licences each authorizing different well construction activities.</p> <p>See Chapter 3: <i>Well Construction Licences: Obtaining, Maintaining & Exemption.</i></p>

Term	Definition	Further clarification
Well Owner	The owner of land upon which a well is situated and includes a tenant or lessee of the land and a well purchaser	<p>Subsection 1(1) of the Wells Regulation</p> <p>This means all three types of person; owner of land, tenant/lessee and well purchaser. In some cases multiple parties are responsible for maintaining or abandoning a well.</p> <p>Can mean an individual or individuals including corporations.</p> <p>Obligations from the person constructing the well to the well owner are to:</p> <ul style="list-style-type: none"> • notify of mineralized water and natural gas occurrences, • provide with well record, and • provide written consent where required (e.g., during disinfection). <p>Obligations of the well owner are to:</p> <ul style="list-style-type: none"> • maintain the well as required, • abandon the well where required, and • provide written consent where required (e.g., during disinfection).

Term	Definition	Further clarification
Well Purchaser	A person who enters into a contract for the construction of a well with a person who is engaged in the business of constructing wells	<p>Subsection 1(1) of the Wells Regulation</p> <p>A well purchaser is not a person constructing a well.</p> <p>Can mean an individual or individuals including corporations.</p> <p>Obligations from the person constructing the well to the well purchaser are to:</p> <ul style="list-style-type: none"> • notify of mineralized water and natural gas occurrences, • provide with well record, • provide with an information package, • provide with a water sample where required, and • measure the depth of the well where required <p>Obligations of the well purchaser are to:</p> <ul style="list-style-type: none"> • maintain well as required, • abandon well where required, and • provide written consent where required (e.g., during disinfection)
Well Record	A form supplied by the Ministry for recording information about a well during construction or abandonment of the well	Subsection 1(1) of the Wells Regulation

Term	Definition	Further clarification
Well Screen	Perforated pipe or tubing, unsealed concrete tiles or other material installed in a well to filter out particulate matter and form the water intake zone	<p>Typically, well screens for drilled wells are manufactured with specific slot sizes to prevent the formation's materials from entering the well.</p> <p>Persons constructing wells can slot or perforate casings to create well screens or install concrete casings with unsealed joints to create well screens.</p> <p>For new well construction, where the person uses concrete tiles as well casing and well screen, the well screen begins at the first unsealed joint in the concrete tiles and ends either at the bottom of the unsealed concrete tiles or any gravel or sand installed below the tiles in the excavated hole.</p>

Term	Definition	Further clarification
Well's Structural Stage Completion	<p>A well's structural stage is complete on the day on which the well is capable of being used for the purpose for which it was constructed but for:</p> <ul style="list-style-type: none"> (a) compliance with Section 15; (b) the installation of a pump, or (c) any alterations necessary to accommodate pumping, monitoring, sampling, testing or water treatment equipment 	<p>Subsection 1(3) of the Wells Regulation</p> <p>By the time the well is ready to be used, except for the installation of the pump and disinfection, the person constructing the well must, unless exempt, have met certain obligations, such as the:</p> <ul style="list-style-type: none"> • well has been developed, • well yield has been tested, and • well tag has been affixed to the well in accordance with the Wells Regulation. <p>On completion of the well's structural stage, the person constructing the well must, unless exempt, meet the well record completion requirements.</p> <p>If a well is being altered (other than a minor alteration or pump installation), such as installing a liner or casing sleeve in a well, the person has structurally disabled the well from being used for the purpose for which it was constructed. After the alteration has been completed on the well, the well is again capable of being used for the purpose for which it was constructed. A person must then disinfect the well (see Chapter 8: <i>Well Disinfection</i>) and complete a well record (see Chapter 13: <i>Well Records, Documentation, Reporting & Tagging</i>).</p> <p>This term does not apply to well abandonment because the well is not capable of being used after it has been properly plugged and sealed.</p>

TABLE 2-2: OTHER TERMS IN ADDITION TO THOSE DEFINED IN THE WELLS REGULATION

The terms described in Table 2-2 are for the purposes of providing clarification with respect to the **Wells Regulation** and may have other meanings in different contexts or in relation to other legislation. Unless otherwise indicated, they are derived from the ordinary dictionary meaning of the word.

Additional terms can be found in the Glossary at the end of this manual.

Term	Description	Further clarification
Agriculture	<p>For clarification purposes, “agriculture” is defined in the <i>Labour Relations Act</i> and the <i>Agricultural Employees Protection Act</i>.</p> <p>“Agriculture” includes farming in all its branches, including dairying, beekeeping, aquaculture, silviculture and horticulture.</p> <p>Agriculture includes the raising of livestock including non-traditional livestock, furbearing animals and poultry, the production, cultivation, growing and harvesting of agricultural commodities, including eggs, maple products, mushrooms and tobacco, and includes any practices performed as an integral part of an agricultural operation.</p>	<p><i>The Nutrient Management Act</i> also provides a definition for the term “agricultural operation.” An “agricultural operation” includes:</p> <ul style="list-style-type: none"> • Draining, irrigating or cultivating of land • Growing, producing or raising farm animals • The production of agricultural crops including greenhouse crops, maple syrup, mushrooms, nursery stock, tobacco, trees and turf grass • The production of eggs, cream and milk • The operation of agricultural machinery and equipment • Ground and aerial spraying • The management of materials containing nutrients for farm purposes • The processing by a farmer of the products produced primarily from the farmer’s agricultural operation • Activities that are a necessary but ancillary part of an agricultural operation such as the use of transport vehicles for the purposes of the agricultural operation • Any other agricultural activity prescribed by the regulations under the <i>Nutrient Management Act</i>, conducted on, in or over agricultural land

Term	Description	Further clarification
Artificial Wetlands	<p>Wetlands that are artificially created.</p> <p>Includes human-made permanently or intermittently wet areas, shallow water, and land water margins that support an ecosystem of plants and animals that are adapted to wet conditions.</p>	<p>Artificial wetlands are exempt from Sections 36 to 50 of the <i>Ontario Water Resources Act</i> and the Wells Regulation.</p>
Breakaway Guide	<p>A device that aids in proper alignment of the casing when using a cable tool rig by centering the casing. It must not impair the quality of the water with which it comes into contact and must be placed 2 m (6.5') above the bottom of the casing.</p>	<p>The breakaway guide is placed 2 m (6.5') from the bottom of the leading casing during installation.</p>
Canal	<p>An artificial channel for surface water that may intersect groundwater. There are two types of canals: irrigation canals, which are used for the delivery of water, and waterways, which are navigable transportation canals.</p>	<p>Canals are exempt from Sections 36 to 50 of the <i>Ontario Water Resources Act</i> and the Wells Regulation.</p>

Term	Description	Further clarification
Clean	<p>The word “clean” is used in different contexts in the regulation.</p> <p>With respect to equipment, clean means all visible dirt, debris and material have been removed.</p> <p>With respect to water, clean means water that will not interfere with the reaction to make a bentonite, concrete or cement slurry as recommended by the manufacturer and will not impair the well water.</p> <p>With respect to sand or gravel material, clean means that it should at least:</p> <ul style="list-style-type: none"> • be washed with clean water to remove finer textured material, and • not cause an impairment of the well water 	<p>When installing any type of equipment in a well, it is a best management practice that the equipment is not only clean but also disinfected.</p> <p>When installing clean sand or gravel, it is a best management practice to meet the parameter concentrations of Table 1 in Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the <i>Environmental Protection Act</i>, April 15, 2011¹. A copy is available on Ontario.ca.</p>
Clear	<p>As it refers to well water, “clear” means that all debris, including well cuttings and drilling fluids, have been removed from the well and well water; and the water is transparent or unclouded.</p> <p>This does not mean without any naturally occurring colour associated with the well water.</p>	<p>For example, groundwater can turn an orange colour where naturally occurring iron is present in the groundwater and formation. Groundwater can turn a black colour where naturally occurring iron sulphide is associated with the groundwater. Both of these samples could be “clear” for the purpose of the well development requirements in the Wells Regulation.</p>
Commercially Manufactured Vermin-proof Well Cap	<p>A cap that creates a vermin-proof seal at the top of the well. A typical cap consists of top and bottom pieces with a rubber gasket in between. The bottom piece is connected to the well casing. The top piece is fastened to the bottom piece. The cap contains a port to house an electrical conduit or plug, as applicable. Also, the cap contains screened and shielded air vents.</p>	<p>Can also mean a sanitary well seal.</p> <p>See Chapter 9: <i>Equipment Installation</i>, “Well Caps and covers,” for more information.</p>

¹ Government of Ontario. April 15, 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*. PIBS# 7382e01. A copy is available on Ontario.ca

Term	Description	Further clarification
Contaminant	<p>As guidance and for the consideration of the person installing a well, “contaminant” means any solid, liquid, gas, odour, heat, sound, vibration, radiation or any combination of the above resulting directly or indirectly from human activities that causes or may cause an adverse effect. (As per <i>Environmental Protection Act</i>, R.S.O. 1990. c. E 19 (EPA), ss.1</p> <p>“Source of contaminant” means anything that discharges into the natural environment any contaminant (As per the <i>Environmental Protection Act</i>, R.S.O., 1990. c E 19 (EPA) ss 1(1)).</p>	<p>Source of contaminants means the actual source of the contamination and not the pathway that a plume of contaminants would take from the source through the overburden and/or bedrock. Assessing and determining potential sources of contaminants that fit the definition of source of contaminants is dealt with on a case by case basis.</p> <p>A source of contaminants list may include but is not limited to the following:</p> <ul style="list-style-type: none"> • All components of a sewage system under the <i>Building Code Act</i>, the <i>Ontario Water Resources Act</i> or the <i>Environmental Protection Act</i> • A farm animal feed lot • An animal manure pile • A barn and barnyard • A lagoon • An underground or above ground storage tank and lines that are designed to hold and move petroleum hydrocarbons, volatile organic compounds, polychlorinated biphenyls, phenols and other organic chemicals • An open or closed hazardous or non hazardous landfill or dump • A sewer line • A pond • Fertilizers, pesticides, herbicides and other chemical storage areas • Liquid or solid waste transfer facilities • Sewage sludge and biosolid waste spreading and irrigation sites • Winter sand and salt storage facilities

Term	Description	Further clarification
Contaminated Area or Site	Means an area that contains a contaminant. See definition of “contaminant”.	<p>Also see “Contaminant” in Table 2-2.</p> <p>To help determine if the site has an area that is considered a contaminated area, a person constructing a shallow works should:</p> <ul style="list-style-type: none"> • review previous hydrogeological and geological reports for the site, • assess the formations, and • use the Guideline titled Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the <i>Environmental Protection Act</i> ². <p>For further information on shallow works, see Chapter 3: <i>Exemptions: Wells, Activities & Experienced Professionals</i>.</p> <p>In determining whether a roadway is a contaminated area, a person constructing a well should consider Regulation 339 as amended made under the <i>Environmental Protection Act</i>. Section 2 of Regulation 339 provides:</p> <ul style="list-style-type: none"> • Where any substance in or on the ground that was used on a highway by the Crown as represented by the Minister of Transportation or any road authority or any agent or employee of any of them for the purpose of keeping the highway safe for traffic under conditions of snow or ice or both is a contaminant, it is classified and is exempt from the <i>Environmental Protection Act</i> and the regulation.

² Government of Ontario. April 15, 2011. *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*. PIBS# 7382e01, A copy is available at Ontario.ca

Term	Description	Further clarification
		<p>Substances exempted by Regulation 339 and used as specified in that regulation do not create a contaminated area for the purposes of the shallow works exemption.</p> <p>Salt storage domes or spills of salt are not captured by the above exemption.</p>
Ditch	An excavation that is created to channel water. A ditch can also be used for drainage of low lying areas, alongside roadways or fields.	A ditch is exempt from Sections 36 to 50 of the <i>Ontario Water Resources Act</i> and the Wells Regulation .
Double Walled Casing	As guidance to a person constructing a new well, a double walled casing in the Wells Regulation includes an inner casing within an outer permanent casing. The outer casing must surround the inner casing for part or all of the inner casing's length.	<p>The inner casing, or casings, can extend above the top of outer casing or can extend below the bottom of the outer casing.</p> <p>The annular space between the casings in a new well must be sealed with suitable sealant to prevent the entry of surface water and other foreign materials.</p>
Driven Point/Use of a Driven Point	A solid point or cone that is driven into the ground.	<p>Driven point construction method means a method that uses a solid point or cone that is driven into the ground. This does not include a cutting shoe unless a solid point is installed on an inner rod. This method is not machinery specific.</p> <p>For example, the type of machinery that can be used to drive the solid point or cone into the ground can include direct push technology, rotary, percussion, pneumatic hammers, sonic, non-powered manual methods, and cone penetration testing equipment.</p>

Term	Description	Further clarification
<p>Equipment Used to Test the Yield of the Well or the Aquifer</p>	<p>Equipment used to test the yield of the well includes a pump that is used to conduct a pumping test.</p>	<p>The equipment referred to in the column to the left includes equipment used to measure the water levels in the well during and immediately after a yield or pumping test. Examples of water level measuring equipment include:</p> <ul style="list-style-type: none"> • A pressure transducer and datalogger system, • An electrical water level device, • An air line to measure water levels. <p>Flow meters used to measure the rate of water during the test are also considered equipment used to test the yield of the well.</p> <p>This term does not include water level measurement devices, sampling devices or pumps that are installed for purposes other than testing the yield of the well.</p> <p>Certain sections of the Wells Regulation dealing with licensing and exemptions refer to this term.</p> <p>See the description of “Well Yield” in Table 2-2.</p>

Term	Description	Further clarification
Free Chlorine Residual	The amount of chlorine available as dissolved gas (Cl ₂), hypochlorous acid (HOCl), and hypochlorite ion (OCl ⁻), that is not combined with ammonia (NH ₃) or other compounds in water.	The Procedure for Disinfection of Drinking Water in Ontario (As adopted by reference by Ontario Regulation 170/03 made under the <i>Safe Drinking Water Act</i>) ³ by the Ministry of the Environment and Climate Change provides helpful definitions for free (available) chlorine residual, total chlorine residual and combined (available) residual chlorine in footnotes 4, 5 and 6 on Page 6. An online resource is available on Ontario.ca.
Free of Sand (Essentially Sand Free)	Sand free water or essentially sand free water is water from a new well that has been developed and is producing water that is free and clear of any fine grain materials, such as clay, silt, or sand.	
High Yield Well	A well that can yield a rate of more than 60 litres per second could be considered a high yield well.	
Lagoon	May include an engineered excavation designed to hold waste or wastewater or in some cases allow for the exfiltration of the waste.	Lagoons are exempt from Sections 36 to 50 of the Ontario Water Resources Act and the Wells Regulation ; however, they are subject to approval instruments under the <i>Ontario Water Resources Act</i> or the <i>Environmental Protection Act</i> .
Licensee	Holder of a well contractor licence or a well technician licence, as the case requires.	

³ Ministry of Environment. June 4, 2006. (Originally dated April 16, 2003, First Revision June 1, 2003) *Procedure for Disinfection of Drinking Water in Ontario (As adopted by reference by Ontario Regulation 170/03 under the Safe Drinking Water Act): Second Revision*. PIBS 4448e01. Available at URL: http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079706.pdf

Term	Description	Further clarification
Log of Overburden and Bedrock Materials	A log of overburden and bedrock materials or geologic log is required to be recorded on a well record. The Ministry provides instructions on how to make general observations and complete the log of overburden and bedrock materials intersected by the hole or excavation.	
Mastic Material	<p>Mastic material is a preformed, manufactured material used to seal the joints between two concrete casing sections that:</p> <ul style="list-style-type: none"> • Remains pliable and waterproof, • Is approved for potable water use by the NSF International Standard 61. (Search NSF Certified Drinking Water System Components online: http://www.nsf.org/Certified/PwsComponents/) 	<p>It is commonly made of a bitumen or butyl rubber sealant product.</p> <p>As a best management practice, it should at the least meet the ASTM C990M-06⁴ standard titled: <i>Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.</i></p>
Mineral Exploration	<p>For clarification purposes, “mineral exploration” is defined in Ontario Regulation 504/95 (Exemption – Prospectors) made under the <i>Environmental Protection Act</i>, R.S.O. 1990, c. E.19</p> <p>“Mineral exploration” means prospecting, staking or exploration for minerals and any activities related to prospecting, staking or exploration for minerals, and includes advanced exploration as defined in Part VII of the <i>Mining Act</i>.</p>	<p>“Minerals” means all naturally occurring metallic and non-metallic minerals, including coal, salt, quarry and pit material, gold, silver and all rare and precious minerals and metals, but does not include sand, gravel, peat, gas or oil.</p>

⁴ ASTM Standard C990M, 2006. "Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants," ASTM International, West Conshohocken, PA, 2003, DOI: 10.1520/C0990M-06, www.astm.org.

Term	Description	Further clarification
Natural Gas	Natural gas or other gas is a gas produced from a well that has the potential to create conditions for explosions, poisoning, fire, asphyxiation or other adverse effects at the well site, within the water distribution system connected to the well or within buildings connected to wells. Some problematic gases that have been found in wells in Ontario include methane, hydrogen sulphide, propane, butane, benzene, carbon dioxide and other hydrocarbon based gases.	<p>If any natural gas is observed by smell, feel or vision or detected by a meter at any concentration, the gas must be immediately reported to the Director (Spills Action Centre at 1-800-268-6060), well purchaser and well owner.</p> <p>If the release or discharge of the natural gas or other gas causes, or may cause, an adverse effect to the natural environment, section 15 of the Environmental Protection Act requires the person constructing the well to report the release to the Spills Action Centre (1-800-268-6060).</p>
New Well	A well is considered to be a "new well" at the time when the initial hole (test hole or dewatering well) is constructed.	The obligation to meet new well requirements in the Wells Regulation is placed on the person constructing a well and applies during the construction of a new well and its parts (e.g., casing, annular space etc.).
Non Powered Equipment	Non-powered equipment includes well construction or abandonment equipment which is used without the need for a power source such as electricity, petroleum fuel or pressurized water.	
Original ground surface	The surface of the ground at the well site immediately prior to well construction or well abandonment.	
Overdrilling	Re-drilling an existing well using a drill bit that is larger than the diameter of the existing well casing or hole. The drilling operation reams (or rips) out the existing well's casing and annular seal.	The technique is typically used to remove and install new well casing in a well rehabilitation operation or used to plug and seal a well.
Permanent	The word permanent means a one time installation that is intended to last indefinitely.	

Term	Description	Further clarification
Person Abandoning the Well	<p>In the case of a well that must be immediately abandoned, the person abandoning the well is one of the following:</p> <ul style="list-style-type: none"> • the person who has discontinued the construction of a new well prior to the completion of its structural stage • the well purchaser of a new well that is dry • the well owner of a well that: <ul style="list-style-type: none"> ○ is not in use or being maintained for future use as a well, ○ is producing water that is mineralized or not potable (not applicable to test holes or dewatering wells), ○ contains natural gas or other gas, ○ permits the movement of materials including natural gas and contaminants and the movement may impair the quality of the waters, or ○ is constructed in contravention of the Wells Regulation requirements for location, methods, materials or standards and measures taken to rectify the problem have failed. 	
Pond	A natural or human-made depression, smaller than a lake that collects groundwater and/or surface water.	
Potable Water	Water that meets, at a minimum, the Drinking-Water Quality Standards found in Ontario Regulation 169/03 as amended under the <i>Safe Drinking Water Act</i> .	

Term	Description	Further clarification
Previously Installed	Equipment found to be already installed into the well when arriving at the well is considered to be equipment that has been previously installed.	Some monitoring equipment is allowed to be left unattended in wells because the equipment has been previously installed in the wells. For example, a pump and pumping equipment have been installed into a well by a licensed well technician. The person can use the previously installed pump and pumping equipment to sample water from the well and be exempt from the licensing requirements in respect of sampling and monitoring in the <i>Ontario Water Resources Act</i> and the Wells Regulation .
Property	A property is a piece of real estate owned by an individual or a corporation. An example of a property would be a piece of land owned or deeded to a person. Another example of property would be an entire roadway owned by a road authority.	
Recommended Pumping Rate	The estimated sustainable yield of the well based on the well yield test.	<p>The recommended pumping rate will reflect the efficiency of the well screen (if present), the development of the well and the nature of the formation (aquifer) and should allow for a sufficient safety margin.</p> <p>The recommended pumping rate should be calculated to prevent water shortages and formation collapse around a well screen.</p> <p>The person conducting the well yield test must report the recommended pumping rate on the well record.</p>
Reservoir	An artificial lake used for the storage and control of water.	Reservoirs are exempt from Sections 36 to 50 of the <i>Ontario Water Resources Act</i> and the Wells Regulation .

Term	Description	Further clarification
Routine Repair	A routine repair or routine maintenance on a well occurs when a person is following a sequence of actions regularly undertaken with respect to a well or is performing a regular procedure on a well	<p>An example of routine maintenance may be removing the well cap and verifying the condition of the casing and pump waterline annually.</p> <p>The following are examples of activities that are NOT considered to be routine repairs or maintenance:</p> <ul style="list-style-type: none"> • Adding a well casing extension • Cutting casing • Deepening a well • Replacing a casing • Installing a well screen in a well • Pulling a pump and/or a waterline from a water supply well and re-installing the equipment in the well. • Changing a pitless adapter attached to well casing • Measuring water levels in a well with a water level meter while performing a constant rate, step pumping test in the same or another well. • Using equipment in the redevelopment or rehabilitation of an existing well, such as during hydraulic fracturing. <p>See the definition of “Minor Alteration” in Table 2-1</p>

Term	Description	Further clarification
Slot Number	Manufacturer's designate slot openings on a manufactured well screen by a number. The number matches the width in the slot openings in thousandths of an inch. For example a number 10 slot is an opening of 0.010" (which is converted to 0.25 mm). For smaller diameter well screens covered by wire mesh, manufacturers designate mesh number openings by a gauge number instead of a slot number. For example a number 10 slot equals a gauge number 60 ⁵ .	
Slurry	A mixture of liquid, especially water, and any of several divided substances, such as cement or clay particles.	
Tile Drain	A pipe surrounded by granular material to collect and convey water.	Tile drains are exempt from Sections 36 to 50 of the <i>Ontario Water Resources Act</i> and the Wells Regulation .
Trench	An elongated excavation where the excavation depth typically exceeds the excavation width.	Trench drains are exempt from Sections 36 to 50 of the <i>Ontario Water Resources Act</i> and the Wells Regulation .
Unattended	Refers to the circumstance when a person working on a well is no longer in control of or watching the specific well.	Examples of leaving the well unattended can include leaving the property, working on another well while not being present at the original well or not being in control of the well site.

⁵ Sterrett, Robert J. 2007. *Groundwater and Wells: Third Edition*. Johnson Screens/a Weatherford Company, St. Paul Minnesota. Pp. 395-398.

Term	Description	Further clarification
Useful Aquifer	<p>An aquifer is defined as a water-bearing formation that is capable of transmitting water in sufficient quantities to serve as a source of a water supply.</p> <p>For the purposes of the Wells Regulation the terms “useful” and “aquifer” are considered qualitative terms that are applied on a case by case basis.</p> <p>The term “useful” in relation to aquifer could mean:</p> <ul style="list-style-type: none"> • A formation that yields sufficient supplies of water; • The water quality has to be suitable for the person’s purposes; • A material associated with the formation, such as a natural gas, has to be suitable for the person’s use; • The depth of the aquifer is such that it is economically feasible to drill, install devices and/or install pumping equipment to obtain the aquifer’s groundwater; or • The quality of the water in the aquifer is such that it is economically feasible to install treatment devices to obtain suitable water. 	<p>The Wells Regulation requires that a new well be at least 6 m (20’) deep, unless the only useful aquifer available necessitates a shallower well, in which case the well must be at least 3 m (10’) deep.</p>

Term	Description	Further clarification
Water Intake Zone	<p>The location of a well screen and installed sand or gravel material beside and below the well screen is considered the water intake zone of a well.</p> <p>Some wells are constructed with casing into overburden deposits. The bottom of the casing is completely open. Sometimes coarse material such as gravel or sand is placed below the open casing which is typical of large diameter dug and bored wells. In this type of well construction, any installed sand and gravel below the well and the open bottom area of the well casing is considered to be the water intake zone.</p> <p>In other situations wells are constructed with casing into bedrock deposits. In many cases, the hole below the casing is open in the bedrock (this portion is typically referred to as “open hole”). In these environments, the bedrock will typically be sufficiently strong prevent the formation from collapsing into the open hole. The open hole is designed to intersect one or more groundwater bearing bedrock fractures that will supply groundwater to the well. Thus, the entire open portion of the well below the well casing is considered a water intake zone.</p>	

Term	Description	Further clarification
Water Producing Zone	<p>The meaning of “water producing zone” is understood differently depending on the well construction and formation. The following can be considered a water producing zone:</p> <ul style="list-style-type: none"> • A well screen • A water intake zone at the bottom of an open well casing completed into an overburden formation • A bored well using concrete tiles with unsealed joints may encounter groundwater in two separate formations separated by a confining formation. Both groundwater producing formations are considered two separate water producing zones in the well. • A groundwater bearing fracture intersected by a well where a well is constructed as an open hole in the bedrock. 	
Waterproof	“Waterproof” and “watertight” have the same general meaning.	
Watertight	<p>Watertight means closely sealed, fastened or fitted so as to prevent the passage of water. A person should not be able to observe water movement through a joint, seam, seal or material using an appropriate performance test for the material.</p> <p>In the case of a watertight connection, well cover or flush mounted cover, “watertight” means a person cannot visually observe water or other foreign materials leaking or moving through any portion including the joint of the cover or connection.</p>	<p>See “Sealant” in Table 2-1 for further clarification on watertight materials.</p> <p>Most pipe is taper threaded with a rubber gasket to provide water tight joints.</p>

Term	Description	Further clarification
Weathered Bedrock	Weathered unconsolidated rock in the basal subsoil or highly fractured rock commonly found above the competent (solid) bedrock. Based on its characteristics and the behaviour of groundwater in weathered bedrock, unconsolidated rock in the basal subsoil is generally considered as part of the overburden rather than as bedrock.	Basal subsoil is considered the deepest layer of overburden immediately above the bedrock.
Well Abandonment	The circumstances and timeframes in which a well must be abandoned and the requirements to be complied with when abandoning a well. Well abandonment and the activities associated with well abandonment are not considered to be “constructing a well” or “well construction activities.”	
Well Development	<p>A method, such as surging or blowing, used to do the following:</p> <ul style="list-style-type: none"> • remove any water or drilling fluid introduced during well construction, • stabilize the filter pack and formation material around the well screen, • minimize the amount of fine grained material entering the well; and • improve the well efficiency and inflow of water into the well. 	

Term	Description	Further clarification
Well Opening	<p>The open area within the well casing or an excavation from the ground surface to at least 2 metres below the ground surface at the site of an abandoned well. If an excavator is used to remove well casing during a well abandonment (plugging and sealing), the well opening can be larger than the diameter of the well.</p>	<p>During the plugging and sealing of a well, the entire well opening must be filled with bentonite chips, pellets, granules or powder to a thickness of 0.5 to 1.5 metres thick in the well opening. The remainder of the well opening must be filled with soil cover or other material more in keeping with the surface material immediately adjacent to the well opening, to prevent inadvertent or unauthorized access.</p> <p>Requirements for filling a "well opening" are found in Chapter 15: <i>Abandonment - How to Plug and Seal Wells</i></p>
Well Pit	<p>An enclosed structure located at and below the ground surface that houses the top of the well and any associated pumping equipment.</p> <p>The well pit:</p> <ul style="list-style-type: none"> • Protects the well from outside environmental conditions such as the prevention of waterline freezing, surface water runoff and other foreign materials, and • Allows access to the well from the land surface for well and pumping system maintenance. 	
Well Production Rate	<p>The well production rate is the estimated maximum sustainable yield of the well water based on the well yield test.</p>	<p>The person conducting the well yield test must report the well production rate on the well record.</p>
Well Tag	<p>An identification tag with a unique alphanumeric identifier obtained from the Ministry to be affixed to the outside of or near the well casing.</p>	<p>The tag links the well in the field with the well record.</p> <p>For further information, see Chapter 13: <i>Well Records, Documentation, Reporting & Tagging</i>.</p>

Term	Description	Further clarification
Well Yield	The well yield is the volume of water discharging from a well over a period of time.	Well yield testing, or testing the yield of the well requirements are found in sections 14.9 and 14.10 of the Wells Regulation .
Wick Drain	A piece of equipment such as a prefabricated plastic core wrapped in a geotextile cloth, which is pushed into the ground and draws water from the soil to accelerate the settlement of soils.	<p>Wick drains are used in the construction of highways and roads, bridge abutments, railways, dykes and dams, and other structures that are built on soft, saturated, compressible soils.</p> <p>Wick drains are exempt from Sections 36 to 50 of the <i>Ontario Water Resources Act</i> and the Wells Regulation.</p>