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ONSITE WASTEWATER TREATMENT SYSTEM (OWTS)

I. INTRODUCTION

As of May 13, 2018, the City of Los Angeles' policies regarding the approval of an Onsite Wastewater Treatment System (OWTS), referred to as Private Sewage Disposal System (PSDS) in the Los Angeles Municipal Code (LAMC), has changed significantly. On that date, the State Water Resources Control Board OWTS Policy (State OWTS Policy) became effective in the City of Los Angeles. The State OWTS Policy can be downloaded at this Web Page:

https://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf.

A consequence of this change in policy is that many applications for new OWTS constructed in the City of Los Angeles will be referred by the City to the Regional Water Quality Control Board (RWQCB) for a Waste Discharge Requirement (WDR) permit, prior to obtaining approval by the Los Angeles Department of Building and Safety (LADBS).

II. BRIEF SUMMARY OF STATE OWTS POLICY

The State OWTS policy sets minimum standards for OWTS and for OWTS programs administered by local agencies (counties and cities). The State categorizes OWTS into five Tiers, as listed below:

- Tier 0: Existing OWTS, which are functioning properly.
- Tier 1: Low risk new or replacement OWTS.
- Tier 2: New or replacement OWTS administered by a Local Agency Management Program (LAMP).
- Tier 3: OWTS sited near impaired water bodies, which will require a supplemental effluent treatment system.
- Tier 4: Failed or failing OWTS that require corrective action.

III. CITY OF LOS ANGELES OWTS POLICY UNDER STATE REQUIREMENTS

All existing previously permitted OWTS within the City of Los Angeles (classified at Tier 0) may remain as is, regardless of what kind of dispersal system they have. At the time of issuance of this Information Bulletin (2018), a Local Agency Management Program (LAMP) has not been submitted to the State Water Board by the City of Los Angeles, although one may be in the future. As such, the City can only approve Tier 1 (Low Risk) OWTS, without the State first issuing a WDR permit. Tier 1 OWTS have substantial restrictions that are outlined below. Replacement of failed (Tier 4) OWTS that satisfy Tier

1 conditions may also be approved by the City if public sewer is not available (generally when an existing sewer is over 200 feet away). In some cases, replacement or additions to existing OWTS, regardless of type of dispersal system, can be permitted by the City (see Section VIII).

New OWTS for single-family, duplex, multi-residential and commercial buildings within the City of Los Angeles will only be permitted when a public sewer is not available as determined by the Bureau of Engineering of the Department of Public Works (BOE). An OWTS or part thereof shall serve only the property on which it is located and shall not be permitted to serve any offsite building or structure or any portion of such building.

All OWTS with a discharge of over 3,500 gallons per day will be referred to the RWQCB to obtain a WDR permit. Single-family residences are usually much less than 3,500 gallons. The discharge of commercial developments are determined by Table H 201.1(2) of the LA Plumbing Code.

IV. DEFINITIONS

For the purpose of this bulletin, the following terms (capitalized in the text) are defined:

1. An **Active Water Well** is any active domestic or public production water well.
2. **Bedrooms** (for single-family residential OWTS purposes only) - All rooms shall be counted as bedrooms except the following rooms: Living rooms, dining rooms, dens, storage room(s), recreation rooms, family rooms, kitchens, bathrooms, laundry rooms, and closets.
3. **BOE** is the Bureau of Engineering within the Department of Public Works.
4. A **Cesspool** is a subsurface storage facility, which is usually brick-lined' that receives domestic wastewater (both solid and liquid) without a septic tank. The City of Los Angeles does not allow cesspools and they have not been permitted since the 1950's.
5. A **Dispersal System** is where effluent is discharged to the natural ground. In general, these consist of dispersal/leach trench, seepage pit, or other types of system for final wastewater treatment and subsurface discharge.
6. A **Disposal Trench** is a system of one or more shallow trenches containing a filter medium, such as gravel, surrounding a drain line that is constructed to allow disposal of effluent from a septic tank.
7. **Failed Septic Systems** are where any part of the system is surcharged to the point of backing up into the dwelling, or overflow on to the ground surface, are required to be pumped out, and/or have sewage effluent leaking on or off the lot.
8. An **Impaired Water Body** is any water body identified by the Regional Water Quality Control Board as impaired due to high levels of nitrates and/or bacteria under section 303d of the Clean Water Act.

9. **LASAN** is the Bureau of Sanitation of the Department of Public Works.
10. **Local Agency Management Program (LAMP)**, is a regulatory plan to permit Tier 2 OWTS by a subdivision of the state, such as a county or city. The LAMP must be reviewed and approved by the RWQCB or the State Water Resource Quality Control Board. In addition, groundwater must be monitored to some extent to assess the OWTS influence on the groundwater quality. Annual reporting to the state is required.
11. An **Onsite Wastewater Treatment System (OWTS)**, also referred to as a “Private Sewage Disposal Systems (PSDS)” in the Los Angeles Municipal Code, is an Onsite Wastewater Treatment System (OWTS) consisting of a septic tank and typically a subsurface effluent dispersal system, such as a leach lines or seepage pit. A **Conventional OWTS** does not include a Supplemental Treatment system. An **Advanced OWTS** has Supplemental Treatment.
12. **PCIS** is the Department of Building and Safety Plan Check and Inspection System for issuing permits.
13. **Percolation Test** is a subsurface test conducted to measure the absorption rate of the soil/earth material at the Site. The test(s) is conducted after initial pre-saturation and is usually expressed as minutes per inch (MPI) for disposal trenches, or gallons per square foot of surface area per day for seepage pits. Percolation tests must be conducted by a Qualified Professional.
14. A **Qualified Contractor (QC)** is an individual who possesses a valid California License as General Engineering Contractor (Class A), General Building Contractor (Class B), Sanitation System Contractor (Specialty Class C-42), or Plumbing Contractor (Specialty Class C-36). The qualifying contractor under this definition may perform all work related to installation of new and replaced OWTS, and repair of existing OWTS in accordance with California Business and Professions Code and Title 16 of the California Code of Regulations.
15. A **Qualified Professional (QP)** is a person who is either a licensed California Professional Geologist, a California Certified Engineering Geologist, a California Certified Hydrogeologist, a California Registered Professional Engineer, a California Registered Professional Geotechnical Engineer, or a California Registered Environmental Health Specialist. An individual must have at least one of these licenses to perform a Site Evaluation.
16. **RWQCB** is the **Los Angeles Regional Water Quality Control Board**.
17. A **Seepage Pit** is typically cylindrical drilled or dug hole, which is 4 to 6 feet in diameter and 15 to 100 feet deep and is constructed to allow disposal of effluent from a septic tank or other OWTS. It does not include Cesspools that do not receive effluent from a septic tank.
18. A **Septic Tank** is a watertight, covered receptacle designed for primary treatment of sewage and constructed to:

- Receive wastewater discharged from a building;
 - Separate settleable and floating solids from the liquid;
 - Digest organic matter by anaerobic bacterial action;
 - Store digested solids; and
 - Clarify wastewater for further treatment with final subsurface discharge.
19. **Site** is the location of the OWTS and, where applicable, a reserved (future) dispersal area capable of disposing 100 percent of the design flow of the constructed dispersal area.
20. **Site Evaluation Report (SER)** is an assessment of the characteristics of the site sufficient to determine its suitability for and OWTS to meet the requirements of the City and State policy. The site evaluation must be conducted by a Qualified Professional (QP).
21. **Streams** are watercourses from which OWTS must be setback from. Major water courses are identified from the following:
- The RWQCB modified EPA Streams Map;
 - The National Hydrologic Data Stream Map (from USGS 100:000 scale); or
 - Any stream as shown on the Simulated Stream Flow Paths Map generated from a Digital Elevation Model.
- The definition of stream/creek shall include, but is not limited to, the following:
- A watercourse that is a naturally occurring swale or depression;
 - An engineered channel or conduit which carries fresh or estuarine water either seasonally or year round within the City boundaries;
 - Any area identified through field investigation by a trained biologist, licensed geologist, licensed civil engineer, licensed landscape architect, hydrologist, fluvial geomorphologist, or ecologist as meeting the above criteria and as verified by the Department of Public Works, City of Los Angeles;
 - Stream/creeks include tributary drainage that carry storm water runoff from any size watershed to larger streams.
22. **Supplemental Treatment** is any OWTS or component of an OWTS, except a septic tank, that performs additional wastewater treatment prior to the subsurface disposal of effluent. Supplemental Septic treatment systems must be approved by the RWQCB and they must meet performance requirements that may be set by RWQCB.
23. A **Waste Discharge Requirement (or WDR)**, as related to OWTS, is an operation and discharge permit issued by the RWQCB for the discharge of wastewater where Supplemental Treatment is required.
24. The **USGS** is the United States Geological Survey.

V. TIER 1 OWTS APPROVABLE BY THE CITY OF LOS ANGELES WITHOUT A WDR

The following conditions must be met for an OWTS to qualify as a Tier 1.

1. The effluent discharge may not be over 3,500 gallons per day.
2. The dispersal system is limited to trenches. The Dispersal Trench must be designed to have an absorption area of no more than four square feet per foot of trench. The absorption area is the bottom and side walls of the trench backfilled with gravel just below the dispersal pipe. The maximum width of the trench is three feet.
3. Percolation rates are limited; between 1 to 60 Minutes per inch (MPI) when using the Ryon method for leach trench design, or 0.8 to 1.2 gallons per square feet per day (g/ft²/day) for seepage pit design.
4. The bottom of the leach trench shall be no less than 20 feet from the highest anticipated groundwater level or bedrock for percolation rates of 1 to 4 MPI; and no less than 10 feet for percolation rates from 5 to 10 MPI.
5. The Dispersal Trenches shall be placed on natural ground with a gradient no steeper than 4:1 (horizontal:vertical).
6. The soil at the Dispersal Trenches contain no more than 50 percent of cobble-sized rock fragments.

VI. SITE EVALUATION REPORT

All new and replacement OWTS require a Site Evaluation Report (SER) prepared by a Qualified Professional (QP). The purpose of the report is to determine the site conditions relative to accommodating an OWTS. For new projects the report can be submitted for review to the Grading Division of the LADBS if the site attains all of the attributes of the Tier 1 conditions outlined in section V above. If Tier 1 conditions are not met, the report shall be submitted to the RWQCB to obtain a WDR. However, submitting the report to the Grading Division is also required for design verification purposes, and in hillside areas for slope stability assessment purposes. See Section VIII for exceptions when adding to an existing OWTS.

The QP should be familiar with the requirements of the RWQCB, including their requirement for reports for obtaining a WDR. The current contact for the RWQCB is:

Eric Wu, Ph.D., P.E., Chief of Groundwater Permitting Unit
Phone No.: (213) 576-6683, email: Eric.Wu@waterboards.ca.gov
Regional Water Quality Control Board
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

The QP who prepares the SER shall sign and stamp the report. The same QP shall sign and stamp the plot plan submitted to Plan Check for the final permit approval.

The Site Evaluation report shall contain, but may not be limited to, the following information:

1. The property address, ownership information, the QP's information, the date of the testing, and the description of the procedures.
2. The name and the profession of the person(s) who performed the actual percolation testing procedure and their working relationship with the QP who signed the report.
3. A description of the site, including the size, location, vegetation, geomorphic setting and site-specific topography. The slope gradient at the proposed Dispersal System is required.
4. The locations and distances of Streams and Active Water Wells.
5. A site-specific determination of seasonal and historical subsurface water levels, including information regarding the methods utilized to reach the determination. This should include all available historical data that supports the findings concluded by the QP.
6. The geologic conditions, depth to bedrock or impermeable strata, and detailed descriptions of the soil at the proposed disposal field.
7. Percolation test results, included those of failed test holes. Calculation must be included and the results presented in either minutes per inch (MPI), for trenches; or in gallons per square foot per day for seepage pits.
8. A detailed log of an exploratory excavation that was down-hole logged by a California Professional Geologist, California Certified Hydrogeologist, or California Certified Engineering Geologist when it is safe in their judgement to do so.
9. A detailed geologic map and cross-section showing all the existing and proposed additions or buildings (including floor plans), location of the existing and proposed disposal trenches or seepage pits, including the 100 percent expansion area, large trees, proposed grading, and the top and toe of existing slopes and proposed graded slopes.

For guidelines on conducting percolation tests and determining the depth to highest anticipated groundwater, please see Chapters 8 to 11 of the County of Los Angeles *Conventional and Non-Conventional Onsite Wastewater Treatment Systems - Requirements and Procedures*, dated July 2016 and available at the following web page:

http://www.publichealth.lacounty.gov/eh/docs/ep_lu_OWTS_procedures.pdf

VII. OWTS DESIGN REQUIREMENTS

All new, replacement or altered OWTS, including non-Tier 1 systems with an approved WDR, shall

meet the following requirements:

1. The design of the OWTS shall comply with Chapters 7, 11 and Appendix H of the Los Angeles Plumbing Code (LAPC).
2. The OWTS shall consist of a septic tank with effluent discharging into one or more seepage pit(s) or disposal trenches.
3. No excavation for a disposal system with approved supplemental treatment systems shall extend within ten (10) feet of the high ground water level, if percolation rates exceed 5 MPI, or twenty (20) feet, if more than 5 MPI, but not exceeding 1 MPI.
4. The location of the OWTS shall comply with Table H 101.8 of the LAPC.
5. The liquid capacity of the septic tank are based on number of bedrooms and shall comply with Table H 201.1(1) of the LAPC, or for non-residential development Table H 201(2) shall be complied with.
6. No rainwater, surface or subsurface water shall be discharged into the OWTS.
7. The use of Table 201.1(3) is not allowed. Design absorption capacities may only be based on site specific percolation tests.
8. Leach trenches shall be design for the absorption area required by the Ryon Formula and associated percolation rate. Absorption area per foot of trench is limited to 4 square feet without a WDR.
9. The construction of seepage pits shall be in accordance with Section H 701.0, Appendix H of the LAPC.
10. Seepage pits without Supplemental Treatment systems shall be sized; or have the volumetric capacity to hold five times the capacity of the Septic Tank divided by the percolation rate, as long as the range is no higher than 1.2 gallons/ft²/day and no lower than 0.83 gallons/ft²/day.
11. Seepage pits with Supplemental Treatment systems shall be sized; or have the volumetric capacity to hold three times the capacity of the Septic Tank divided by the percolation rate.
12. The volumetric capacity of seepage pit is based on the diameter of the interior of the lining.
13. Percolation from seepage pits shall not be permitted to occur within fill nor where rock strata, discontinuities, or combinations of dense soils could force the effluent to surface.
14. Seepage pits on or near slopes shall be sealed/capped at a minimum vertical distance of 5 feet below the weathered bedrock and/or soil/fill contact; and at least 25 feet minimum horizontal distance from the sloped surface of un-weathered bedrock, whichever is deeper. Seepage pits on slopes of 45 degrees or exceeding 45 degrees shall require the setback distance to be

measured from an imaginary plane of 45 degrees to the horizontal projected upward from the toe of such slope. It shall be noted that these values are minimums and site conditions may warrant a greater setback distance or Sealing Cap depth.

15. For seepage pits on or adjacent to a slope, a slope stability assessment must be included in the geotechnical report submitted to the Grading Division. A saturated surface shall be modeled in the calculation that projects 45 degrees from the capping depth. This projection may be shallower if geologic conditions are adverse direct effluent along bedding or other geologic structures that are inclined less than 45 degrees.
16. No additions or alterations shall be permitted to an existing building that is connected to an OWTS unless the OWTS for the building with the additions and/or alterations, complies with all provisions of this Information Bulletin.
17. Any expansion of an existing OWTS shall be done so as not to impair the function of any existing OWTS nor affect the stability of adjoining slopes and shall not be located within an area subject to inundation nor where it will cause contamination.

VIII. EXCEPTION FOR WDR REQUIREMENT FOR REPLACEMENT OWTS

The WDR for non-Tier 1 systems is not required when adding to, or replacing portions of existing OWTS. This applies only when a major part of the OWTS remains, such as the septic tank, or the dispersal system. Existing seepage pit systems can be added to in these cases. If an existing OWTS is completely removed and replaced, a WDR will be required if Tier 1 is not complied with. All new seepage pits and dispersal trenches will require a Site Evaluation report. If an existing seepage pit is to be used when increasing the size of the septic tank, a Qualified Professional (QP) or Qualified Contractor (QC) shall evaluate whether the existing pit is capable of absorbing the increased effluent. If it is determined that the percolation rate at a new seepage pit location is over 1.2 gallons/ft²/day, or 1 MPI for a disposal trench, a WDR may be required.

In order for new Accessory Dwelling Units (ADU) to connect to an existing OWTS serving the main residence, additional seepage pits may be approved by the City without a WDR, if a percolation test is performed and the percolation rate is within the Tier 1 requirements. ADUs that need their own OWTS will be considered a new system and must comply with all Tier 1 conditions, or a WDR will be required.

IX. OWTS PERMITTING PROCESS AND FINAL APPROVAL

A flow chart showing the general steps to obtain an OWTS is located at the end of this Information Bulletin. This section also contains more detail regarding plan check, other related permits, inspection and final approval.

A. Required Agency Clearances

All Plumbing/Grading permits for new, replacement, or altered OWTS shall be referred to the

BOE to obtain sign-off prior to issuance of the permits. BOE will determine sewer availability (usually if a sewer within 200 feet).

B. Plan Check/Grading Permit

Prior to obtaining a permit to install a new or altered OWTS, plans prepared, signed and stamped by the Qualified Professional shall be submitted at any LADBS Plan Check counter. The plans will be reviewed by the Grading Division plan checker, who will either issue corrections or a permit to construct the OWTS. The submittal package must contain the following.

1. The plot plan of all existing and proposed buildings and the OWTS.
2. The OWTS shall be fully dimensioned with at least two coordinates such as property lines, etc.
3. A plot plan, to scale, showing the locations of the components of the OWTS and the Supplemental Treatment System (when required). The locations of the streams and the depth to groundwater shall be clearly indicated on the plot plan.
4. The plans shall contain percolation rates for which the system has been designed.
5. For OWTS that require a WDR, the approved WDR report from the RWQCB shall be included in the submittal. If a WDR is not required, the approval letter from the Grading Division shall be included.

After plans have been approved a grading permit will be issued.

C. Plumbing Permit

A plumbing permit shall then be obtained for the septic tank, the supplemental treatment system (when required), and for connecting sewer lines into the OWTS. An additional fee shall be paid for each building drain connected to the building sewer line serviced by the OWTS.

The name of the Supplemental Septic Treatment System (when required by the RWQCB), the manufacturer, and the name of the installer certified by the manufacturer shall be indicated on the plans and the plumbing permit.

D. Inspection

Prior to installing an OWTS, the following items are required to be completed prior to the pre-construction inspection:

1. Stake, flag and dryline property lines adjacent to the proposed OWTS according to a licensed survey. This survey may be waived by filing for a Department administrative

approval if the site is relatively level and it can be demonstrated to the grading Inspector's satisfaction that the location of the OWTS is within the subject site.

2. Stake and flag the corners of proposed buildings near the proposed OWTS.
3. Stake and flag the location of any existing and/or proposed OWTS.
4. Stake the ends of the proposed leach trenches or the center of proposed seepage pit(s).

Field inspection shall be called for the initial inspection after the property is flagged and staked.

For seepage pits, the contractor shall notify CAL/OSHA prior to the excavation of the pit(s). After the pit has been drilled, but prior to the placement of any liner, the consultant geologist shall:

1. Inspect and approve the pit and location and verify that the bedrock/soil conditions encountered are as anticipated in the report.
2. Leave a written notice to inform the grading inspector that it is acceptable to seal the pit as per report and the LADBS grading approval letter.
3. Submit a supplemental report to LADBS for approval if the site conditions are different than given in the approved original report.

The grading inspector shall be notified before the side walls/liner are completely installed, lids are placed and fluids are introduced. During this inspection, the grading inspector shall verify the location, depth, separation distances between components and capping requirements as per approved plans by the LADBS Grading Division.

Where a Supplemental Treatment is required, the QC shall certify that the system has been installed according to the approved plans and the manufacturer's specifications. This certification letter shall be submitted to the LADBS grading inspector upon completion of the installation of the OWTS.

X. ABANDONED CESSPOOLS, SEEPAGE PITS, AND SEPTIC TANKS

Every cesspool, seepage pit, and or septic tank which has been abandoned, discontinued from further use, or to which no pipe from a plumbing fixture is connected shall have the sewage removed and be completely filled with an approved material.

A. Grading Permit

A grading permit shall be obtained to backfill abandoned cesspool, septic tank, and/or seepage pits. The methods to be used for structural or non-structural backfilling shall be as recommended by a soils engineer and approved by the Grading Division. A plot plan showing

the location of the abandoned cesspool, septic tank, or seepage pit shall be shown on the back of, or attached to, the permit application.

B. Backfill Requirements

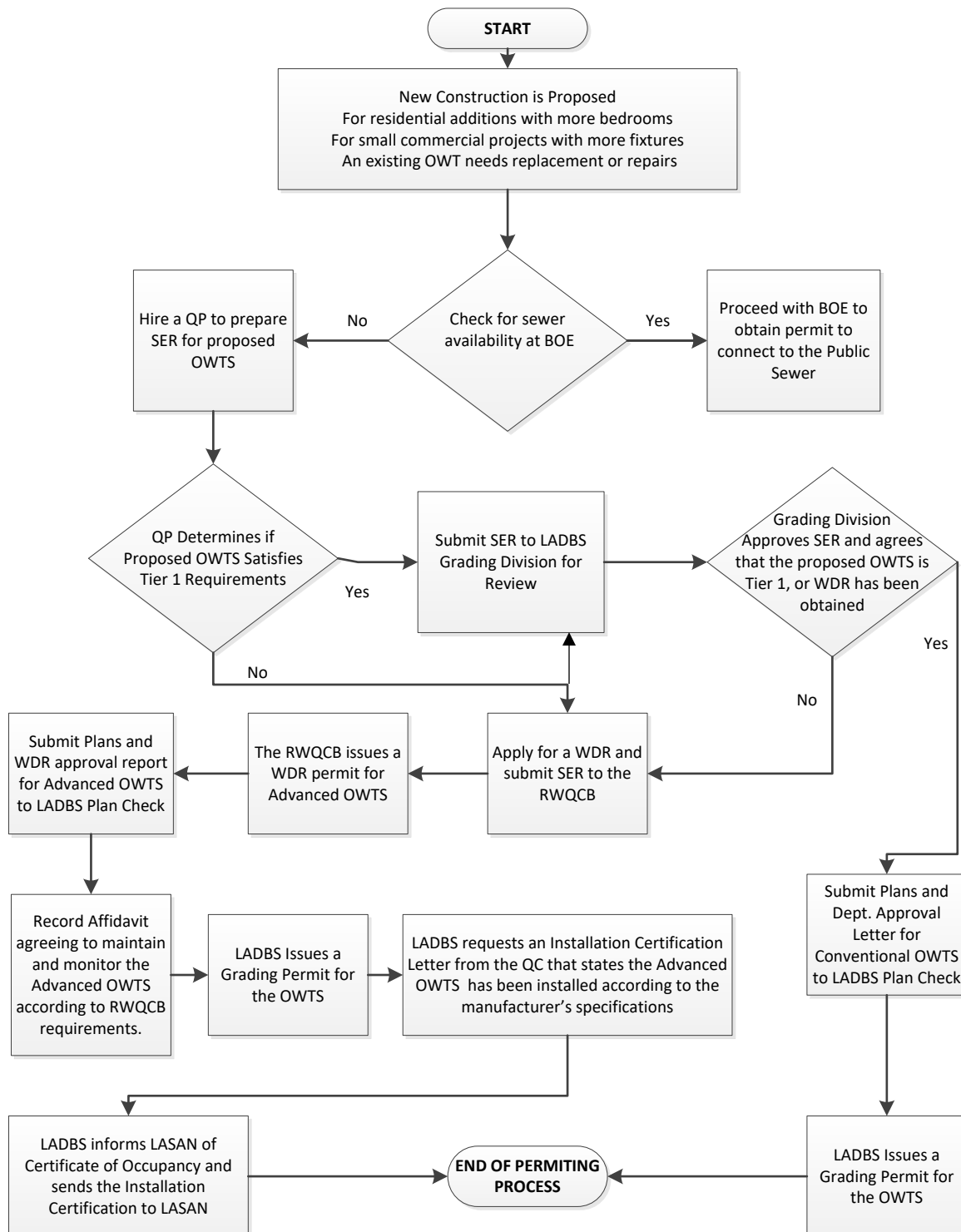
1. Prior to the placement of the backfill and after the cesspool, septic tank, and/or seepage pit have been cleaned; the cesspool, septic tank, and/or seepage pit shall be inspected by the Grading Inspector. For certified soil fill, inspection by a soils engineer is also required prior to the inspection by the grading inspector for backfill.
2. The top cover or arch dome over the cesspool or seepage pit shall be removed before backfilling. Walls must be removed if the fill is to be certified as structural fill.
3. All backfill shall be compacted to a minimum of 90% relative compaction as tested by a soils testing agency licensed by the City and certified by a licensed soil engineer. A minimum 5-foot depth of fill is required above the top of the cap/lid covering the cesspool or seepage pit.

Exception: Flooded clean sand or gravel may be used as fill material provided the fill is used as a non-structural backfill. However, a Request for Modification of Building Ordinances (RFM) will be required.

4. Abandoned septic tanks shall be cleaned, flushed, backfilled with clean sand, slurry, or concrete, and covered with the original lid. A grading permit shall be obtained for this backfill. The permit application shall include a plot plan showing the location of the abandoned tank.
5. The placement of CLSM (slurry) for backfill shall comply with the current version of information bulletin P/BC 2014 -121.

C. Plumbing Permit

While a plumbing permit is not required to abandon the cesspool, septic tank, or seepage pit, plumbing permits are required for any new plumbing fixtures and/or the connection of a house sewer to a public sewer. All plumbing fixtures and pipelines connected to the OWTS shall be disconnected upon such abandonment.



Note: See text for definitions and acronym designations.