

# EL DORADO COUNTY LOCAL AGENCY MANAGEMENT PLAN FOR ONSITE WASTEWATER TREATMENT SYSTEMS (LAMP)

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*Effective as of May 13, 2018*

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# EL DORADO COUNTY LOCAL AGENCY MANAGEMENT PLAN FOR ONSITE WASTEWATER TREATMENT SYSTEMS

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## SECTION 1 - INTRODUCTION

### A. BACKGROUND

The California Water Code authorizes the State Water Resources Control Board (SWRCB) to regulate all discharges, including those from Onsite Wastewater Treatment Systems, which could adversely impact water quality. The policies of the SWRCB are implemented locally through nine (9) Regional Water Quality Control Boards. Historically, each regional board developed basin plans that outlined water quality objectives in their respective jurisdictions as well as policies and programs to achieve those objectives.

Discharges are regulated through the use of Waste Discharge Requirements (WDRs). El Dorado County is under the jurisdiction of Region Five which is the Central Valley Regional Water Quality Control Board (RWQCB). The SWRCB regulatory authority extends to individual **Onsite Wastewater Treatment Systems (OWTS)**. General guidelines for the siting, design, and construction of OWTS were part of each regional board's basin plans. The SWRCB and the regional boards recognize the advantages and efficiencies of OWTS regulation by local agencies. Consequently, while the regional boards retained primacy over large and specialized systems, direct regulatory authority for individual OWTS has been delegated to individual counties.

The SWRCB Water Quality Control Policy for Siting, Design, Operation, and Maintenance of OWTS (State OWTS Policy) and **Local Agency Management Plan (LAMP)** are the culmination of the actions required by Assembly Bill 885 (AB 885). AB 885 was introduced to the California State Assembly on February 25, 1999, and would have impacted only coastal counties. The final version approved on September 27, 2000, was more inclusive, affecting all California counties. This legislation directed the SWRCB to develop regulations or standards for OWTS to be implemented statewide by qualified local agencies that issue OWTS permits, which in El Dorado County is the Community Development Agency, Environmental Management Division (CDAEMD). The SWRCB adopted the State OWTS Policy on June 19, 2012. The Policy was subsequently approved by the Office of Administrative Law on November, 13, 2012, and became effective on May 13, 2013. The State OWTS Policy allows local agencies to approve OWTS, based on a local ordinance, after submittal and approval of a LAMP by the applicable RWQCB.

Under an approved LAMP, the requirement to obtain WDRs for an OWTS is conditionally waived for OWTS that are in conformance with the State OWTS Policy. Failure of counties to submit and obtain approval of a LAMP would mean that OWTS permits for only those few sites meeting the more restrictive Tier I requirements could be issued by local agencies. All other existing sites would potentially be subject to the WDR process.

### B. POLICY TIERS

The State OWTS Policy places OWTS in California into one of the following Tiers:

TIER 0- Existing OWTS. These are defined as Existing OWTS that are properly functioning and do not meet the conditions of failing. These do not require corrective action as specifically described in Tier 4 and are not contributing to an impairment of surface water as specifically described in Tier 3.

TIER 1 - Low-risk New or Replacement OWTS. These are New or Replacement OWTS that meet low risk siting and design requirements as specified in Tier 1. Minimum soil depths to groundwater and minimum soil depth from the bottom of a Dispersal System range from five (5) to twenty (20) feet based on soil percolation rates.

TIER 2 - Local Agency Management Plan for New and Replacement OWTS. California is known for its extreme range of geological and climatic conditions. As such, the establishment of a single set of criteria for OWTS would either be too restrictive so as to protect the most sensitive case or would have broad allowances that would not be protective enough under some circumstances. To accommodate this extreme variance, local agencies may submit management programs known as the Local Agency Management Plan (LAMP) for approval by the RWQCB, and then upon approval, manage the installation of New and Replacement OWTS under that plan. An approved LAMP allows local agencies to develop customized management programs that address the soil and groundwater depths specific to that jurisdiction. The LAMP must be approved by the appropriate RWQCB. Under an approved LAMP, separation of the bottom of a Dispersal System to groundwater of as little as two (2) feet may be allowed with an approved Alternate Dispersal System OWTS (also known as a Special Design OWTS in El Dorado County). Once approved, the standards contained in an approved LAMP supersede the Tier 1 standards. However, systems meeting Tier 1 soil and siting criteria would be considered a Standard OWTS within El Dorado County.

TIER 3 - Impaired Areas. Systems that are within six hundred (600) feet of impaired water bodies as defined in Section 303(d) of the federal Clean Water Act. There are no such water bodies identified within El Dorado County.

TIER 4 - OWTS Requiring Corrective Action. OWTS that require corrective action or fail at any time while this LAMP is in effect are automatically in Tier 4 and must follow Tier 2 requirements pending completion of corrective action.

It is El Dorado County's intent to regulate projected wastewater flows up to 10,000 gallons per day under Tier 2 for dispersal underground only. In addition to projects that may have waste strength greater than normally found in domestic flows evaluated by CDAEMD staff, any project with a projected flow nearing 10,000 gallons per day will be discussed with the RWQCB staff.

Additionally, through the use of a variety of Supplemental Treatment Systems and/or Alternate Dispersal Systems, which are described in the Standards for the Site Evaluation, Design, and Construction of Onsite Wastewater Treatment Systems (OWTS Manual), this LAMP includes a number of differing system designs

and monitoring requirements to meet the full intent of the State OWTS Policy. The Director of the CDAEMD shall maintain the OWTS Manual and may amend the OWTS Manual to reflect current engineering concepts and legal requirements only upon a written finding that the amendment is consistent with the LAMP and the State OWTS Policy. CDAEMD is committed to protecting public health and water quality while allowing continued development in El Dorado County.

### **C. PROHIBITIONS** (OWTS Policy 9.4) (OWTS Manual Section 1H)

1. Pursuant to the State OWTS Policy, the following are not authorized in the CDAEMD LAMP:

- Cesspools of any kind or size. (OWTS Policy 9.4.1)
- OWTS receiving a projected flow over 10,000 gallons per day. (OWTS Policy 9.4.2)
- OWTS that utilize any form of Effluent dispersal that discharges on or above the post installation ground surface such as sprinklers, exposed drip lines, free-surface wetlands, a pond, or any other similar surface discharge. (OWTS Policy 9.4.3)
- Slopes greater than 30 % without a slope stability report approved by a Qualified Professional. (OWTS Policy 9.4.4)
- Decreased leaching area for International Association of Plumbing and Mechanical Officials (IAPMO) certified Dispersal Systems using a multiplier less than 0.70. (OWTS Policy 9.4.5)
- OWTS utilizing Supplemental Treatment without requirements for periodic monitoring or inspections. (OWTS Policy 9.4.6)
- OWTS dedicated to receiving significant amounts of wastes dumped from Recreational Vehicle (RV) holding tanks. (OWTS Policy 9.4.7)
- Separation of the bottom of Dispersal System to groundwater less than two (2) feet. (OWTS Policy 9.4.8)
- Installation of New or Replacement OWTS where public sewer is available. The public sewer may be considered unavailable when such public sewer or any building or exterior drainage facility is located more than two hundred (200) feet from any proposed building or exterior drainage facility on any lot or premises that abuts and is served by such public sewer. This provision does not apply to Replacement OWTS where the connection fees and construction costs are greater than twice the total cost of the Replacement OWTS and the CDAEMD determines that the discharge from the OWTS will not affect groundwater or surface water to a degree that makes it unfit for drinking or other uses. (OWTS Policy 9.4.9)
- California State Water Code (Porter-Cologne Water Act) Chapter 12 (Cal. Health & Safety Code, §§ 13950-13952.5), prohibits the disposal of municipal wastewater to groundwater and requires export of sewage from the Tahoe Basin, therefore OWTS will not be permitted. Any previously unknown OWTS, once discovered, will be identified and CDAEMD will consult with appropriate RWQCB staff to evaluate options for sewage disposal (Appendix A. County of El Dorado – Regional Water Quality Control Board Jurisdiction [map] and Appendix B. Tahoe Prohibitions) (OWTS Policy 9.1.2).

2. Horizontal Setback Requirements (OWTS Policy 9.4.10) (OWTS Manual Section 2B). Except as provided in the noted exceptions below, CDAEMD may not approve New or Replacement OWTS with the minimum horizontal setbacks less than any of the following:

- One hundred fifty (150) feet from a Public Water Well where the depth of the effluent Dispersal System does not exceed ten (10) feet in depth. (OWTS Policy 9.4.10.1)
- Two hundred (200) feet from a Public Water Well where the depth of the effluent Dispersal System exceeds ten (10) feet in depth. (OWTS Policy 9.4.10.2)
- Where the effluent Dispersal System is within six hundred (600) feet of a Public Water Well and exceeds twenty (20) feet in depth, the horizontal setback required to achieve a two-year travel time for microbiological contaminants shall be evaluated. A Qualified Professional shall conduct this evaluation; however, in no case shall the setback be less than two hundred (200) feet. (OWTS Policy 9.4.10.3)
- Where the effluent Dispersal System is within twelve hundred (1,200) feet from a Public Water System's surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the Dispersal System shall be no less than four hundred (400) feet from the high water mark of the reservoir, lake, or flowing water body. (OWTS Policy 9.4.10.4)
- Where the effluent Dispersal System is located more than twelve hundred (1,200) feet but less than twenty-five hundred (2,500) feet from a Public Water System's surface water intake point, within the catchment area of drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the Dispersal System shall be no less than two hundred (200) feet from the high water mark of the reservoir, lake, or flowing water body. (OWTS Policy 9.4.10.5)

### 3. Exceptions

- For Replacement OWTS that do not meet these horizontal separation requirements, the Replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such cases, the Replacement OWTS shall utilize Supplemental Treatment and other mitigation measures, unless the CDAEMD finds that there is no indication that the previous system is adversely affecting the public water source and there is limited potential that the replacement system could impact the water source based on topography, soil depth, soil texture, and groundwater separation. (OWTS Policy 9.4.11)
- For New OWTS, installed on parcels of record at the time of effective date of this LAMP, that cannot meet the above horizontal separation requirements, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize Supplemental Treatment for pathogen reduction and any other mitigation measures prescribed by the CDAEMD. (OWTS Policy 9.4.12)

## **D. EXISTING PARCELS** (OWTS Policy 9.1.11) (OWTS Policy 9.1.12) (OWTS Policy 9.2.3) (OWTS Manual Section 1)

There are thousands of existing parcels within El Dorado County that have been developed using OWTS for sewage disposal/treatment purposes. CDAEMD is aware that many Existing OWTS may now be considered substandard as a result of their development prior to the adoption and implementation of current or historical El Dorado County Sewage Disposal Standards (under standards less stringent than those required by the State OWTS Policy). Those systems may be on small lots. The OWTS serving these parcels will be carefully evaluated either under our complaint report program, when the system is evaluated after

receipt of a repair/replacement permit application, or as part of a request to further develop the parcel(s). The intent of CDAEMD is to allow the continued use or uses on the parcel while bringing the OWTS serving the parcel into compliance with the State OWTS Policy to the greatest extent practicable.

The many existing undeveloped parcels in the County will be evaluated under this LAMP for compliance with the horizontal setback requirements to the greatest extent practicable. The minimum two-foot vertical separation between the bottom of the trench and groundwater, required by the State OWTS Policy, cannot be waived through the County's LAMP.

Many existing undeveloped parcels were created with percolation rates over 120 minutes per inch (MPI). Those parcels that show percolation rates between 120 and 240 minutes per inch will be required to mitigate the condition with Special Design OWTS with subsurface drip dispersal, mounds, shallow pressure distribution trenches (with rock or sand), and At-Grade Systems. The Special Design OWTS will be dependent on soil depth, slope, and other conditions in order to protect the waters of the State and public health. These parcels will be closely evaluated to allow the development of the parcel while bringing the OWTS for the parcel into compliance with the State OWTS Policy to the greatest extent practicable. Supplemental Treatment systems will require annual permits with specific monitoring requirements and an annual inspection will be performed by the Service Provider.

#### **E. SEPTAGE CAPACITY** (OWTS Policy 9.2.6) (County Ordinance 8.06)

Septage is the term used for the partially treated solid and liquid material removed from septic tanks, from some treatment systems by septic tank pumper trucks (also known as liquid waste haulers). This material includes settled solids, other floating materials, and some amount of liquid. The solid material must be removed from Septic Tanks to prevent the tank from filling up and potentially damaging the Dispersal System or any Supplemental Treatment system that may be in use. Removal frequency is different for each system, based on tank capacity and use, but generally is not less than every three (3) years.

CDAEMD intends to regulate all OWTS not prohibited by the State OWTS Policy and will seek enforcement action against all OWTS that are prohibited by the State OWTS Policy. Some wastes may be considered high-strength wastewater, which is too “strong” or concentrated for discharge into an OWTS. For example, concentrated wastewater discharged from RV holding tanks, which has resulted in numerous failing OWTS and are more appropriate for storage in holding tanks and removal and transport by septage pumpers to the Union Mine Waste Water Treatment Facility (WWTF). The treatment portion of the WWTF is designed to treat approximately eight (8) million gallons of leachate, septage and portable toilet waste annually, or approximately 22,000 gallons per day (gpd). The WWTF is permitted to treat 16,000 gpd under the current WDR.

#### **F. SEPTIC PUMPER TRUCK APPLICATIONS AND REGISTRATIONS** (OWTS Policy 3.3.2) (County Ordinance 8.06)

CDAEMD requires applications from, issues permits to operate to, and inspects all permitted septage pumper trucks annually within El Dorado County. Inspections of pumper trucks by CDAEMD primarily focus on health, sanitation, and safety issues relating to the trucks, equipment, and employees.

Pumper/haulers are required to report all septic tanks that they pump in the County on a monthly basis. CDAEMD reviews and logs pumping reports into a database to determine if excessive pumping is taking place of an OWTS and will investigate to determine if there is a potential failure of the OWTS.

## **G. DATA COLLECTION/REPORTING/NOTIFICATIONS/RESPONSIBILITIES (OWTS Policy 9.3) (OWTS Policy 9.3.1) (OWTS Policy 3.3.1)**

As a condition of CDAEMD oversight of OWTS within El Dorado County, CDAEMD has certain responsibilities related to data collection and reporting to the RWQCB. CDAEMD also submits data collected from owners and operators of Public Water Systems to the State Water Resources Control Board's Division of Drinking Water (SWRCB-DDW). This Section details data that must be collected by CDAEMD, the procedures for reporting to the RWQCB, and notifications to owners of Public Water Systems and the SWRCB-DDW.

### **1. Water Quality Assessment Program (OWTS Policy 9.3.2) (OWTS Policy 9.3.2.1) (OWTS Policy 9.3.2.2) (OWTS Policy 9.3.2.3) (OWTS Policy 9.3.2.4) (OWTS Policy 9.3.2.5) (OWTS Policy 9.3.2.6) (OWTS Policy 9.3.2.7) (OWTS Policy 9.3.2.8) (OWTS Policy 9.3.2.9)**

CDAEMD will maintain a water quality assessment program to determine the general operational status of Existing OWTS and those systems permitted under this LAMP. CDAEMD will evaluate the impact of discharges from OWTS and assess the extent to which groundwater, local surface water may be impacted. This program will primarily focus on areas where there are shallow or poorly drained soils, fractured Bedrock, shallow Groundwater, proximity to surface water, individual OWTS or a high concentration of OWTS that predate this LAMP, and a high concentration of domestic water wells. Data collected for this program will include the results of investigations into complaints of failing OWTS, inspections of operating OWTS by CDAEMD staff and Service Providers, sample results from our Local Primacy Agency program, which regulates small Public Water Systems, sample results submitted from local watershed management groups, and any other water samples of surface or ground water reported to or obtained by CDAEMD staff including those data collected during well inspections, from monitoring wells, data from GeoTracker, GAMA, parcel maps for subdivision development, from state agency permitted facilities, and other sources of reliable information. The monitoring program may identify areas requiring additional scrutiny of soil test results and designs for proposed OWTS including those OWTS that are new, repaired, replaced, and increased in capacity. The monitoring program may also identify the need for more frequent inspections or maintenance of OWTS.

### **2. Records Retention (OWTS Policy 3.4)**

At a minimum, CDAEMD will retain permanent records of permitting actions and will make them available to RWQCB staff within ten (10) working days upon written request for review. The records for each permit shall reference under which Tier (1, 2, or 4) the permit was issued. CDAEMD uses a computer database to track permits for all projects issued by the CDAEMD including future OWTS permits. Paper copies of completed system applications, soil test data, final drawings, and other related documents are filed in the CDAEMD office until the OWTS has been granted final approval at which time these documents are scanned into a database.



**3. Reporting to the RWQCB** (OWTS Policy 3.3 and Policies 3.3.1 through 3.3.3) (OWTS Policies 9.3.2 and 9.3.3)

- a. An annual report will be submitted to the RWQCB by February 1st each year, in a format prescribed by the State OWTS Policy and with the following information:
- (1) The number and location of complaints pertaining to OWTS operation and maintenance and identification of those which were investigated and how they were resolved. (OWTS Policy 3.3.1)
  - (2) The number, location, and description of permits issued for new and Replacement OWTS and under which Tier the permit was issued, noting any variance allowed for systems otherwise in substantial conformance with the standards. (OWTS Policy 3.3.3)
  - (3) The applications and registrations issued for sewage haulers as part of the septic tank pumper program. (OWTS Policy 3.3.2)
  - (4) Results of the Water Quality Assessment Program intended to evaluate the impact of OWTS on local surface water and groundwater. Any groundwater monitoring data collected shall be submitted in Electronic Deliverable Format (EDF) format for inclusion into GeoTracker, the SWRCB's database of which this data will have exclusive view by RWQCB staff. At this time, at a minimum, it is expected that groundwater monitoring will include, but not be limited to, any samples collected from small Public Water Systems regulated by CDAEMD and any other samples collected in response to subdivision and parcel map developments, complaints, and samples that may be required from OWTS monitoring wells. Surface water monitoring shall be submitted to the California Environmental Data Exchange Network (CEDEN) in a Surface Water Ambient Monitoring Program (SWAMP) comparable format. (OWTS Policies 9.3.2 and 9.3.3)
- b. Every five (5) years, an evaluation of the monitoring program and an assessment of whether water quality is being impacted by OWTS within El Dorado County will be completed. The evaluation prepared by CDAEMD for the RWQCB will identify any changes to the LAMP, if applicable, required to address any impacts from OWTS. (OWTS Policy 9.3.3)

**4. Reporting to Owners of Public Water Systems and Division of Drinking Water at the**

**SWRCB** (OWTS Policy 3.5) (OWTS Policy 9.2.11) (OWTS Policy 9.2.12) (OWTS Manual Section 4H) CDAEMD shall notify the owner of a public well or water intake and the SWRCB-DDW as soon as is practicable, but not later than seventy-two (72) hours, upon verification of a major failure of an OWTS component within:

- One hundred fifty (150) feet of a Public Water Well; and
- Within twenty-five hundred (2,500) feet from a Public Water System surface water intake.

Additionally, CDAEMD will notify the Public Water System prior to the issuance of a new installation or repair permit for an OWTS if a surface water intake is within twelve hundred (1,200) feet of a proposed OWTS, is within the drainage catchment of the intake point and is located such that it may impact water quality at the intake point, or if the proposed OWTS is within the horizontal sanitary setback from a public well. Notification is to be made by CDAEMD upon receipt

of an application for a new or repair permit and prior to issuance of the permit. Notifications will be in email format and emailed to the water system or when email is not available, hard copies will be sent using U.S. Mail. The Public Water System owner shall have fifteen (15) days from receipt of the permit application to provide recommendations and comments to the permitting agency.

For OWTS permit applications for Dispersal Systems within the horizontal sanitary setback of a public well or a surface water intake point, CDAEMD shall first work with the owner of the proposed OWTS to see if relocation of the Dispersal System is possible. Per the State OWTS Policy, an OWTS with Supplemental Treatment for nitrogen reduction and Supplemental Treatment for pathogen reduction may be required if the Dispersal System cannot be relocated to meet the required setback.

#### **5. Outreach Program (OWTS Policy 9.2.5)**

CDAEMD has copies of sewage disposal standards, percolation test instructions, data sheets, and other related documents available to the public in the CDAEMD office and on the County website. All new materials will be available when applicable.

With few exceptions, documents in CDAEMD files are public records. These include copies of OWTS documents such as permitting and installation records, site location drawings, soil test data, copies of applications for permits to drill wells, copies of Public Water System sample results, soil test results conducted as part of a proposed land division, and other records that may relate to OWTS.

Upon request, CDAEMD staff can provide presentations to local homeowner or industry groups or organizations regarding OWTS standards, use, operation, design, construction, and maintenance. CDAEMD generally has information booths at local events, including Earth Day events, the local Home and Garden Show, Household Hazardous Waste collection events, and the El Dorado County Fair.

In addition to OWTS construction permits, CDAEMD will be issuing operating permits for OWTS constructed at sites with soils that do not meet the minimum Tier 1 requirements, including Supplemental Treatment OWTS or other Special Design OWTS as determined by CDAEMD. These permits will require notification, within time frames specified, of any failure or upset conditions with the permitted system. Additionally, CDAEMD will require that an operations and maintenance plan is prepared for each system by the Qualified Professional designing the system. This document shall be provided to the property owner and will include (as will the CDAEMD issued operating permit) procedures to ensure maintenance, repair, or replacement of failing critical items within forty eight (48) hours following discovery. To assist OWTS owners in providing proper maintenance and repairs to their system, and in reporting upset conditions, CDAEMD will maintain a list of Service Providers and Qualified Professionals on the County website, including those contacts that are available twenty-four (24) hours a day, seven (7) days a week, if they exist.

Should CDAEMD implement a voluntary well monitoring program in the future, the outreach program will include information on how well owners may participate.

#### **6. CDAEMD Responsibility (OWTS Policies 9.3 and 9.3.1)**

Permits issued for the construction of a new or Replacement OWTS requiring an Operation and Maintenance (O&M) Plan shall be prepared for the OWTS owner by a Qualified Professional. This Plan will detail operating procedures and maintenance requirements and frequencies.

CDAEMD will establish and maintain a record keeping and reporting system to ensure that current records are kept detailing the location, ownership, site evaluation, design, and O&M reports so that the performance of the systems approved under Tier 2 can be monitored. CDAEMD will monitor and analyze the performance of OWTS within the County by reviewing O&M data. CDAEMD will assure timely follow-up and correction, including enforcement action when necessary, when problems are encountered with treatment or dispersal technologies which are being monitored through the O&M program. CDAEMD may perform O&M inspections, as needed, for quality assurance/quality control, surveys, and investigations.

#### **7. Property Owner, Qualified Professional, and Service Provider Responsibility**

Property owners, Qualified Professionals (consultants/designers), and Service Providers (system operators and maintenance technicians) all have responsibilities with respect to the use, operation, maintenance, inspection, and reporting related to all OWTS permitted in El Dorado County. The failure of one of these team members to abide by their respective responsibilities may result in premature upset or failure of the OWTS. Failure of an OWTS can lead to surface water or groundwater contamination with untreated or partially treated wastewater and potential public health hazards. Another result of a failing OWTS is the expense to repair or replace the system. This can be equal to, or more than, the construction cost of the original system.

##### **a. Property Owner**

Every OWTS requires care with use and timely maintenance to continue to function as they are designed to function. An OWTS is sized for an expected use. A number of OWTS have failed due to misuse or use beyond that expected when the system was designed and constructed. Using the system beyond its design flows will lead to premature failure. Using the system to dispose of large quantities of household cleansers or disposal of a wastewater stream different from that which the system was designed for can significantly reduce the life span and effectiveness of the OWTS. El Dorado County has multiple options for disposal of Household Hazardous Waste, including curbside pickup and free drop off at permanent collection facilities. Pickup information is available on the County website and provided at County-sponsored HHW events. A property owner must be accurate with the proposed use, quantity, and wastewater stream, when discussing the proposed OWTS with their Qualified Professional and with CDAEMD.

All OWTS require maintenance. This can be as simple as having the septic tank inspected and pumped on a regular basis to the necessary more thorough inspection and maintenance of Supplemental Treatment systems. Generally, most permits issued under this LAMP include at

least some inspection, maintenance, monitoring, and reporting requirements within specified timeframes depending on the complexity of the system installed. An owner of an OWTS must adhere to these tasks at their specified timeframes to assist in keeping their OWTS operating as designed. Owners must contract with a qualified Service Provider, familiar with the type of OWTS in use, to conduct the inspections, maintenance, monitoring, and reporting, as required by the specified timeframes, through a valid installation/operating permit. An owner must correct deficiencies in the OWTS that have been identified by CDAEMD and/or a Service Provider or Qualified Professional.

CDAEMD does not currently regulate the construction and use of gray water systems. These systems are permitted by El Dorado County Community Development Agency Development Services Division (CDADSD) under a plumbing permit. CDADSD will consult with CDAEMD as necessary. An OWTS is designed for a specified wastewater strength and quantity. Property owners should be aware that the use of a gray water system may have an impact on an OWTS in use at a site. OWTS owners need to be sure that the Qualified Professional and CDAEMD staff are aware that a gray water system may be constructed, or consider a Supplemental Treatment system, such as a drip dispersal system, allowing OWTS liquid waste to assist in watering vegetation at the site. CDAEMD does not allow a reduction in the size of an OWTS when a gray water system is proposed at a site.

- b. Qualified Professional (OWTS Policy 9.1.7) (OWTS Policy 9.1.10) (OWTS Policy 9.2.4) (County Ordinance 110.32.130)

Every new/proposed OWTS, and most onsite system repairs, must be designed by a Qualified Professional (see definitions in Appendix A). Qualified Professionals will test each site, recommend a system for the site based on test results, site soil and groundwater depths, and design and provide specifications for that system. The Qualified Professional must be certain that the system is being designed for the proper wastewater strength and flow.

The Qualified Professional must consider potential pathways of wastewater-sourced phosphate and other nutrients toward potentially threatened nearby surface water bodies, when present. They will also consider hydraulic mounding, nitrate and pathogen loading, and sufficiency of potential OWTS replacement areas. The OWTS, potential replacement areas, and all proposed site improvements and structures must fit onto existing and proposed parcels while meeting or exceeding all appropriate setbacks and would be verified by the Qualified Professional on the site plan.

The Qualified Professional must work with the installer to ensure that the system, as constructed, meets the specifications of their design and the permit issued by CDAEMD. An accurate as-built site plan, showing the system location, must be prepared and provided to the property owner.

An operation and maintenance plan prepared by the Qualified Professional or system manufacturer, and made available to the system owner, is required of every Alternate Dispersal or Supplemental Treatment system installed on parcels in El Dorado County. Proper use and routine maintenance at specified intervals, as directed by CDAEMD in a valid OWTS operating permit, is necessary in order for an OWTS to function as designed for as long as possible. The OWTS designer (Qualified Professional) shall prepare the following operations and maintenance plan that is amended if the system is upgraded or requires repair and includes:

- An accurate scale drawing showing the actual location of the OWTS installed on a parcel for ease in locating the system for inspections, maintenance, and monitoring. The drawing is to include the location of all system components;
  - An O&M manual specific to the type of system installed. It shall contain a narrative describing how the system achieves its treatment standards/goals. The manual shall note homeowner or Service Provider procedures to ensure maintenance for continued operation, repair, or replacement within forty-eight (48) hours of identifying a failing system. The manual is to detail the type of maintenance or monitoring required and when these tasks should be done;
  - The tasks can be performed by an owner or if a Service Provider is the more appropriate choice to perform them;
  - The names and telephone numbers of the Qualified Professional, licensed system installer, and OWTS Service Provider; and
  - The reporting required to CDAEMD as a result of these inspections, monitoring, and maintenance or actual failure conditions;
- c. Service Provider (OWTS Policy 9.2.4) (OWTS Manual Section 2D)
- The property owner must contract with a Service Provider to provide necessary inspection, maintenance, monitoring, and reporting services as specified in a valid OWTS permit as issued by CDAEMD. Most OWTS owners may not understand how a system functions and recognize signs that the system needs maintenance or is failing. It is extremely important that the Service Provider complete the required tasks to keep the system operating as planned.

When required by providers of proprietary equipment, the Service Provider must meet and maintain the requirements for qualification for the specific proprietary equipment. The Service Provider shall provide all maintenance records to the property owner and report any system malfunction that results in surfacing sewage to the owner and CDAEMD within 48 hours.

#### **H. OWTS NEAR IMPAIRED WATER BODIES** (OWTS Policy 9.1.8) (OWTS Policy 9.2.2)

None of the impaired water bodies listed in Attachment 2 of the State OWTS Policy are in El Dorado County. CDAEMD will follow the applicable specific requirements of the State OWTS Policy should a water body within El Dorado County be added to the State's list.

**I. ONSITE MAINTENANCE DISTRICTS** (OWTS Policy 9.2.7)

Currently there are two (2) onsite maintenance districts or zones within El Dorado County, Greenstone Estates and Auburn Lake Trails. These systems are regulated by the state RWQCB and CDAEMD. CDAEMD keeps records on these facilities and conducts inspections.

**J. REGIONAL SALT AND NUTRIENT MANAGEMENT PLANS** (OWTS Policy 9.2.8)

There are no existing regional salt or nutrient management plans within El Dorado County nor are any anticipated in the foreseeable future.

**K. WATERSHED MANAGEMENT GROUPS** (OWTS Policy 9.2.9)

Currently, CDAEMD has no formal agreements with any watershed management groups within El Dorado County. Coordination with volunteer groups or any watershed management groups will be evaluated.

**L. PARCEL/LOT SIZE REQUIREMENTS** (OWTS Policy 9.1.2) (OWTS Policy 9.1.10) (OWTS Manual Section 1D)

It should be noted that there has not historically been a minimum lot size for existing lots to be served by an OWTS (that are not also served by a well on the same parcel) and many small parcels have been created over the years, some of which have yet to be developed. However, the OWTS, including the 100% replacement area, shall meet all applicable setbacks to all proposed structures which include, but are not limited to, dwellings, wells, pools, barns, shops, garages, driveways, and other graded/paved/concrete areas which shall fit on the property without interfering with the OWTS unless an exception is provided for under this LAMP.

Section 4 of this LAMP provides specific requirements regarding the creation of new parcels (land divisions) served by OWTS within El Dorado County. Minimum parcel sizes are required by land use agencies per specific site zoning for the County and City of Placerville.

**M. HIGH DOMESTIC WELL USAGE AREAS** (OWTS Policy 9.1.4) (OWTS Policy 9.1.9) (OWTS Policy 9.1.11) (OWTS Policy 9.1.12) (Proposed Well Ordinance)

A majority of El Dorado County residents are served by public or privately operated water systems. Well drilling has been limited to parcels greater than or equal to four and one-half (4.5) acres since 1977 and greater than or equal to five (5) acres since the adoption of the 2004 General Plan. Most existing subdivisions with smaller lots are supplied with public water from El Dorado Irrigation District, City of Placerville, Grizzly Flats and Georgetown Divide Public Utilities Districts, or several other small Public Water Systems.

CDAEMD staff is not aware of any nitrogen impacts to groundwater as a result of the OWTS density in these areas. There are many areas of El Dorado County developed on wells and OWTS but the density is not high enough to be defined as high Domestic Well usage areas.

**SECTION 2. OWTS PERMITTING PROCESS** (OWTS Policy 9.2.1) (OWTS Manual Sections 1 and 4)

## **A. STATE, COUNTY, AND CITY ROLES State / County Coordination**

OWTS discharge pollutants to groundwater and, therefore, are regulated by the State Water Code. Water Code Section 13282 allows the RWQCBs to authorize a local public agency to issue permits for and to regulate OWTS, "to ensure that systems are adequately designed, located, sized, spaced, constructed, and maintained." The RWQCB with jurisdiction over El Dorado County authorizes only the CDAEMD to issue certain OWTS permits throughout the County, including within the City of Placerville, when necessary.

Through the State OWTS Policy, the RWQCB has imposed conditions and restrictions on the County's permit program. CDAEMD is authorized to issue permits for Standard OWTS and Special Design OWTS with or without Supplemental Treatment within the County. The Adopted State OWTS Policy requires a minimum of five (5) feet and up to twenty (20) feet of separation maintained between the bottom of a Dispersal System point and the highest anticipated groundwater level for Standard OWTS, and at least two (2) feet of separation for some Alternate Dispersal Systems, including some with Supplemental Treatment.

The goal of the CDAEMD LAMP is to ensure that installed OWTS will last the life of any structure they serve and not cause any public exposure to surfacing sewage or potential contamination of groundwater or surface waters. The separation requirements are a condition of the State's authorization for El Dorado County to issue OWTS permits locally. The CDAEMD OWTS Manual describes in detail how the County ensures that these State-imposed separation requirements are determined and satisfied.

CDAEMD is a fundamental part of the County's land use approval and permitting processes. While they are coordinated to a great extent, persons seeking OWTS permits from CDAEMD should also review and ensure compliance with applicable site grading, land use, and building requirements.

Similarly, no local land use approval or permit, including, but not limited to, approved land divisions, property line adjustments, or use permits, is a substitute for a County OWTS permit, or a guarantee that such a permit will be issued.

## **B. SYSTEM DESIGN CONSIDERATIONS** (OWTS Policy 9.1.3 and 9.1.6) (County Ordinance 110.32.130) (OWTS Manual Sections 1 and Section 2)

The most common type of Standard OWTS found in El Dorado County consists of a septic tank connected to leach lines. In all cases, the majority of solids, fats, oil, and grease are removed in the septic tank and Effluent from the septic tank is discharged below the ground surface. Organic material present in this Effluent is digested by bacteria in unsaturated soil zones underground. These systems are designed to operate in all weather conditions with minimal maintenance, other than periodic septic tank pumping to remove accumulated sludge and floating scum that form in the septic tank. Under this LAMP, sites with Tier 1 minimum of five (5) to twenty (20) feet of soil beneath a Dispersal System trench, based on soil percolation rates, would not require mitigation or monitoring and a septic tank and leach line Dispersal System could be constructed under a valid OWTS Permit.

In addition to Standard OWTS, El Dorado County allows the use of Special Design OWTS. These systems are generally used for those sites that cannot support the use of a Standard OWTS due to shallow ground water, soil permeability, slope, or soil depth. A variety of OWTS mitigations were accepted in the past to deal with these specific site conditions including shallow trenches, pumps, Curtain Drains, dual leach fields, and other alternative systems and these were designated as Special Design OWTS. The approved State OWTS State Policy now sets a minimum soil depth and separation from groundwater at two (2) feet with the use of a Supplemental Treatment and/or Dispersal System to treat septic tank Effluent prior to discharge into the soil. CDAEMD may allow the use of other systems not otherwise prohibited by the State OWTS Policy.

The size and type of OWTS necessary for a residence or other use will nearly always be a function of the following factors:

1. Soil Permeability. Permeability determines the degree to which soil can accept septic tank or Supplemental Treatment system Effluent over a period of time. Permeability is determined by a percolation test and is reported as a percolation rate, in minutes per inch. (OWTS Policy 9.1.6)
2. Unsaturated Soil Interval. The distance between the bottom of the OWTS dispersal field and the highest anticipated groundwater level or the impervious subsurface layer at the site. (OWTS Policy 9.1.3)
3. Peak Daily Flow. The anticipated peak sewage flow in gallons per day. In most cases the number of bedrooms for a proposed home is used as an indicator of peak daily flow. Daily flow in non-residential uses is calculated from expected flows from charts in the Uniform Plumbing Code, adopted by El Dorado County, and other similar charts or actual flows of similar projects acceptable to CDAEMD.
4. Net Useable Land Area. The area available that meets all setback requirements from structures, easements, watercourses, or other geologic limiting factors for the design/placement of an OWTS. A site may not be developed beyond its capacity to properly treat and disperse the amount of liquid waste expected/generated.
5. Wastewater Strength. Wastewater strength has been of some importance with non-residential systems such as restaurants or other commercial or industrial systems. This is because there may be less water in the waste stream or more solid material, oils, fats, grease, or cleansing or sanitizing materials may be present when compared to what is expected in residential wastewater. Wastewater strength with residential systems may be more important in the future as gray water systems divert a large part of the liquid component of residential wastewater flow from the septic tank.

Some sites may not be acceptable for Standard or Special Design OWTS based on high or low soil permeability and net useable area, regardless of the unsaturated soil interval available at the site.

All Standard OWTS in El Dorado County will require minimum of five (5) feet between the bottom of the dispersal system and the highest anticipated groundwater level for the site. A Special Design OWTS will require a minimum of two (2) feet separation. Depth to groundwater varies tremendously with the



amount of precipitation and soil types for specific sites and areas within El Dorado County, therefore, the highest anticipated groundwater level must be established for any OWTS design in order to meet this separation requirement. Details in determining depth to groundwater and overall soil depth are provided in Section 5 of this LAMP.

The net useable land area required for an OWTS will usually depend on soil permeability, soil depth, expected peak daily flows, and the required 100 % Dispersal System replacement area.

**C. PERMITS ISSUED** (OWTS Policy 3.3.3, 9.1.1 and 9.2.12) (OWTS Manual Section 2D)

Under the CDAEMD OWTS Manual, new systems are considered Standard or Special Design OWTS. Special Design OWTS are systems that require some mitigation for sites that did not meet the minimum standards.

CDAEMD will continue to require the Special Design OWTS as specified in the CDAEMD OWTS Manual, Section 2 to protect public health and water quality within El Dorado County as it has in the past. Special Design OWTS require the Qualified Professional and County to conduct inspections of the installation and the certification of the system by the Qualified Professional. The mitigations and system requirements are contained in the OWTS Manual which includes guidance on a variety of Special Design OWTS. Additionally, for any OWTS with Supplemental Treatment or an Alternate Dispersal System, an operating permit will be issued that will require the completion of inspections, maintenance, monitoring, and reporting. These requirements are detailed in the OWTS Manual under Operating Permits.

**D. CESSPOOLS** (OWTS Policy 9.2.13) (OWTS Policy 9.4.1) (OWTS Manual Section 3H)

A Cesspool is a hole excavated into the ground to receive Domestic Wastewater from a structure. A Cesspool does not have a tank or other water tight settling chamber nor does it have a proper pipe inlet/outlet or a Dispersal System to assist in Effluent treatment and safe disposal. Cesspools have not been approved for use in El Dorado County per our Sewage Disposal Standards dating to the mid 1970's. Cesspools are not authorized by this LAMP.

Any existing Cesspool discovered by CDAEMD through our repair or complaint process or through an application to increase the capacity of any Existing OWTS shall be properly destroyed and replaced with an OWTS acceptable under this LAMP consistent with the same process noted in Section 3, Failing OWTS and Corrective Action. Mitigation measures may be imposed or reimbursement for such mitigation sought under California Health and Safety Code section 5412.5. Permits will not be issued for the construction of any Cesspool.

**E. RECREATIONAL VEHICLE HOLDING TANK WASTE** (OWTS Policy 9.4.7)

Under the State OWTS Policy, CDAEMD is prohibited from issuing permits for systems that receive a significant amount of wastes from Recreational Vehicle (RV) holding tanks. Such systems are regulated by the RWQCB. CDAEMD may issue permits for OWTS that receive RV holding tank wastes as long as those wastes are incidental to a more "normal" waste stream, such as a home with an RV waste Dump Station for use by the homeowner.

## **F. STEPS IN THE PERMIT APPLICATION PROCESS** (OWTS Policies 9.1.11 and 9.2.1) (OWTS Manual Section 1)

All OWTS permit applications for new construction, repairs, or additions within El Dorado County must be submitted to CDAEMD.

### **1. Steps in the Permitting Process**

In general, a complete OWTS permit application contains a completed application form, an accurate site plan, soils test results, and appropriate fees.

### **2. Soil Test Data**

Soil test data may include a soil profile, percolation tests, groundwater monitoring results, and/or soil boring logs. The specific test data required is determined by the type of system proposed and may be modified as the result of the tests conducted. Soil tests are typically required when:

- An Existing Parcel, created prior to soil test requirements for land divisions, is proposed for development;
- Grading or other soil disturbance has occurred in the previously tested/approved area;
- The system is being shifted out of the previously tested/approved area;
- An OWTS other than the type of system previously approved is being considered;
- An Existing OWTS fails or is proposed for expansion and no previous soil test data is available for the specific parcel.

CDAEMD staff will review soil percolation and other test data submitted with the application and determine if the tests are adequate or if additional tests are needed. Parcels created since 1975 (and on some earlier dates for a few land divisions) would have been created with eight (8) foot deep soil profiles to verify that at least four (4) feet of suitable soil exists. This soil test data does not expire and this data should be adequate to allow a permit to be issued for a Standard OWTS or Special Design OWTS with or without supplemental treatment, and without the requirement for additional testing. CDAEMD may nonetheless require additional testing if it determines that such additional testing would be prudent.

If the initial soil test data indicate that a Tier 2 design is applicable project applicants may conduct additional tests to determine if soils at the site meet the more restrictive depth standards under this LAMP with the goal of constructing a Standard OWTS or less costly system. Additional tests would be required if the construction of a specific type of OWTS proposed for a site cannot be supported by the data on hand.

In general, most parcels created prior to 1975 were created with inadequate (under this LAMP) soil tests or without soil test requirements at all. Parcels approved prior to 1975, which have not yet been developed, will require adequate soil testing to verify that these sites meet either the Standard OWTS (Tier 1) or Special Design OWTS requirements with or without supplemental treatment (Tier 2 LAMP).

All required soil tests shall be conducted by, or be under the supervision of, a Qualified Professional such as a California Professional Civil Engineer, Professional Geologist, Registered Environmental Health Specialist (REHS), or a soil scientist and witnessed by CDAEMD (REHS) staff.

For those parcels that have percolation tests and other soil data available, applicants must still develop and submit an accurate site plan for the proposed building project and the proposed OWTS. The site plan must take percolation and other soil test data and this guidance into account.

### **3. Application Site Plan (OWTS Manual Section 1F)**

The application form identifies the location of the property, owner, applicant if not the owner, contractor, proposed use, parcel size, specific assessor parcel number, and proposed water supply for the proposed project. The application identifies any previous land use projects that may have required that soil testing be conducted. The application also identifies the OWTS project as a new installation, a replacement, or a repair.

A complete OWTS permit application includes a detailed, accurate site plan which at a minimum depicts the following:

- The outline and dimensions of the parcel.
- The property owner's name.
- The assessor's parcel number for the property.
- The address of the property.
- A North arrow and scale.
- The acreage of the property.
- Dimensions/square footage/footprint and use of all structures.
- Whether there are mobile homes or houses, whether there is a garage attached to the house, or the location any other structures location on the parcel.
- Easements shown and labeled.
- All OWTS and well locations, both existing and proposed and the distance to all neighboring OWTS and well(s).
- The required 100% for residential or 300% for commercial Dispersal System replacement area.
- All roads and driveways shown and labeled, including length, width, turn radius, and estimated grade.
- Drainages, waterways, water bodies shown and labeled, including roadside ditches, seasonal or dry creek beds, and distance(s) from existing and proposed OWTS.
- Distances to toe and/or top of slopes and cuts, whichever is appropriate.
- Delineation of areas and depth of fill.
- The locations of all percolation tests, soil profile pits, borings, and groundwater monitoring wells. An accurate plan showing all percolation tests, soil profile pits, groundwater monitoring wells, and/or soil borings prepared by a Qualified Professional.
- All existing and proposed grading, including depths of cuts and fills.
- Additional information may be requested for a proposed OWTS based on specific site features or conditions.

- Delineation of flood plain, when applicable.

Additional information may be requested for a proposed OWTS based on specific site features or conditions and must be provided within the time requested.

**G. PERMIT APPLICATION REVIEW AND PERMIT ISSUANCE** (County Ordinance Section 110.32.150) (OWTS Policy 9.2.3) (OWTS Policy 9.3.1 and 9.4.11) (OWTS Manual Section 1)

CDAEMD staff will review all available soil test data, the site plan, and the application to determine if adequate information exists to issue an OWTS permit. After review, if it appears likely that the proposed OWTS (including 100%/300% replacement area) will fit into the site and will function properly, CDAEMD will issue an OWTS Permit. CDADSD and the City of Placerville require an approved OWTS permit before any building permits are issued.

Grading or clearing of brush for the purpose of conducting a site evaluation and soil tests may require a grading permit. Any grading which damages or alters an approved or proposed sewage treatment dispersal area may be costly to correct, may delay the approval of a project, or may preclude the issuance of an OWTS permit.

CDAEMD may allow variances from the State OWTS Policy with regard to horizontal separation. New installations and repairs shall conform to the State OWTS Policy to the greatest extent practicable. CDAEMD staff will work with applicants to determine if relocation of the proposed OWTS is possible to potentially avoid the requirement to add a Supplemental Treatment system. Records of the number, location, and description of permits issued for OWTS where a variance is granted shall be maintained for the annual report to the RWQCB. Variances will not be allowed for the creation of new parcels after the effective date of this LAMP.

**H. FINAL INSPECTION** (OWTS Policy 9.2.1) (OWTS Manual Section 1G)

Once an OWTS permit has been issued, the OWTS can be installed. Such installation must meet all applicable requirements for OWTS construction in El Dorado County and any special conditions specified for that site or permit. CDAEMD staff may require a meeting with the Qualified Professional and installer at a pre-construction conference, as specified in the permit. The system must first be inspected by the Qualified Professional. Standard OWTS will receive an open trench inspection and a final inspection by CDAEMD staff. The Qualified Professional must inspect the open trench on all Special Design OWTS as well as supplemental treatment systems. If the Qualified Professional finds the OWTS to be in compliance with the system design and issued permit, the Qualified Professional must request a final inspection by CDAEMD staff. The system installation must be inspected and approved by CDAEMD before the system can be backfilled. If inspection reveals deficiencies, CDAEMD will issue a Correction Notice.

If the inspection (or subsequent inspections if necessary) is satisfactory, CDAEMD will provide a final approval for the OWTS permit.

Occasionally, CDAEMD will hold final approval on the OWTS permit pending the completion of specific conditions such as placement of backfill materials or final site grading.

El Dorado County land use agencies require that OWTS are installed and final approval granted by CDAEMD before occupancy of structures is allowed. OWTS construction permits, once issued, will be valid for a period of two (2) years. Extensions and renewals of these permits will follow appropriate policy.

**I. PRIMARY AND REPLACEMENT AREA REQUIREMENTS** (County Ordinance 110.32.130)  
(OWTS Manual Section 1B)

In addition to primary system design criteria, all OWTS design proposals, for both new construction and additions to an existing structure or approved use, must show 100%/300% replacement area for eventual replacement of the active OWTS when it reaches the end of its use or fails. Existing lots that were created prior to this LAMP may require that the 100%/300% replacement leach field is installed at the time the primary system is installed in the following situations:

1. The lot is less than one acre or is otherwise a difficult site to conduct a leach field repair, sites where adequate replacement space is limited, and sites with slopes greater than 30%.
2. The use is a commercial project, including food facilities.
3. The Director determines it necessary for other specified reasons.

A switching or alternating valve, to allow easy switching between fields, shall be installed at the time of construction where dual leach fields have been constructed to allow alternating use of fields at specified intervals.

El Dorado County Ordinance allows appeals relating to alternate materials or methods of construction or design to be filed with the El Dorado County Building Appeals Board (County Ordinance Chapter 110.12).

**J. SEPTIC TANKS** (OWTS Manual Section 3A)

All Standard OWTS require the use of a water-tight septic tank to allow for the removal of solids and fats, oils, and grease from the wastewater prior to being discharged to a dispersal field. Most Supplemental Treatment OWTS will also require the use of a septic tank unless a settling chamber is a component of the treatment unit or treatment process. For specific information on the requirements for and sizing septic tanks, see OWTS Manual Section 3A.

**K. SUPPLEMENTAL TREATMENT AND ALTERNATE DISPERSAL OWTS** (County Ordinance 110.32.290, 110.32.300, 110.32.320) (OWTS Manual Section 2D)

On parcels not meeting the groundwater separation in Tier 1 of the State OWTS Policy, a Supplemental Treatment OWTS or Alternate Dispersal OWTS may be used to reduce the required separation to a minimum of two (2) feet between the bottom of the dispersal discharge point and the highest anticipated depth to groundwater. Intermittent sand filters and recirculating sand filters can be constructed at sites from readily available materials or can be purchased as complete units from various manufacturers. Other Supplemental Treatment units, commonly known as proprietary treatment units, can be purchased for installation and use at sites. The Qualified Professional hired by the property owner to conduct the

necessary soils tests shall design and properly size any treatment unit required for an OWTS on a particular parcel.

Supplemental Treatment systems will require annual operating permits that specify monitoring requirements.

#### **L. OWTS LEACH LINE DISPERSAL SYSTEMS** (OWTS Manual Sections 1, 2A, 2C and 2D)

Dispersal Systems for Standard OWTS in El Dorado County typically consist of leach lines and the design is described in detail in the OWTS Manual. Dispersal Systems for OWTS with Supplemental Treatment can also include subsurface drip dispersal, mounds, shallow pressure distribution trenches (with rock or sand), and At-Grade Systems. The OWTS Manual, Section 2, C and D have specifics on the sizing, construction, design criteria, and monitoring of these systems.

The Qualified Professional hired by the property owner to conduct the necessary soils tests shall designate and properly size the type of Dispersal System to be used, including, but not limited to, construction trench and backfill depths. The State OWTS Policy prohibits the installation of Dispersal Systems with less than two (2) feet of separation between the bottom of the Dispersal System and the highest elevation of a seasonal water table. This is reflected in the siting criteria of each specific Dispersal System.

#### **M. SETBACKS** (OWTS Policy 9.2.3) (County Ordinance 110.32.240) (OWTS Manual Section 2B)

Setbacks required in the siting and construction of septic tanks, Supplemental Treatment units, and Dispersal Systems are given in the OWTS Manual and in section 1D of this LAMP. It is anticipated that repairs to some failing OWTS will require a variance from these setbacks. Variances are evaluated by staff, and if deemed necessary, may be approved as long as the variances do not violate the prohibitions in Section 1C of this LAMP. CDAEMD is committed to meeting setbacks to the greatest extent practicable while maintaining the continued use or occupation of the property by owners.

#### **N. PROXIMITY TO PUBLIC SEWERS** (OWTS Policy 9.2.10) (OWTS Policy 9.4.9) (County Ordinance 110.32.090, 110.32.110)

CDAEMD staff will require connection to a public sewer whenever a new or Replacement OWTS is proposed within two hundred (200) feet of public sewers. CDAEMD staff will rely on the agency operating the public sewer to make the determination of availability based on proximity and feasibility discussed in Section 1C of this LAMP. If connection to public sewer is not feasible because the cost is two times greater than the replacement cost of the OWTS, then the proposed OWTS must meet the policies set forth in this LAMP.

### **SECTION 3. FAILING OWTS AND CORRECTIVE ACTION** (OWTS Policy 9.1) (County Ordinance 110.32.110) (OWTS Manual Section 4)

All OWTS have the potential to fail due to age, misuse, and improper design or construction. The failure may result in wastewater backing up into plumbing fixtures, wastewater discharge to the ground surface, Effluent surfacing over a Dispersal System area, or wastewater or Effluent discharge into, and contamination of, potable groundwater or surface water. These failure conditions will require corrective

action to mitigate potential risk to public health and/or contamination of the groundwater and the environment. Corrective action will be required in the event that an OWTS fails. Subsequently, enforcement actions may be necessary if corrective action is not completed within acceptable time frames.

Traditional leach field systems, even when designed and constructed correctly, progressively fail resulting in diminished capacity of some or all of the leach lines. Effluent from septic tanks distributed into leach lines eventually forms a clogging Biomat, restricting the flow of Effluent into the soil for treatment. Effluent would then need to travel further into a leach line to find porous soil. Eventually, all of the leach lines would be clogged by this Biomat-coated soil and the system would no longer accept liquid, resulting over time in a failing system with sewage backing up into a structure or surfacing above a leach field.

Tree roots are another cause for system failure. Tree roots can enter the pipe and rock of a leach line and over time totally plug the leach line, again resulting in either a sewage backup to structures or surfacing Effluent.

Less frequently, some change may have been made to site contours or drainage that adversely impacts the leach field, such as site grading or driving vehicles over the leach field, or the presence of shallow groundwater that was not evident in soil pits or other tests, resulting in a failing system. These and other similar causes of a failing system are referred to as a major failure generally resulting in the need to perform a Major Repair including replacement of the entire leach line or other Dispersal System.

Another example of major failure would be a septic tank that was somehow damaged or was no longer watertight allowing the discharge of untreated sewage or the infiltration of Groundwater into the tank. These issues could be the result of the tank settling over time, the growth of tree roots into the tank, driving heavy vehicles or storing heavy items over the top of the tank, or improper setting of the tank when the system was originally constructed.

Examples of less serious or minor failures, and more easily repaired defects, would be a cracked distribution box or a crushed solid line between the septic tank and the distribution box, which would require a Minor Repair.

Regardless of whether a major or minor repair is required, a permit to perform the repair is required from CDAEMD and all systems, after repair, must be in compliance with this LAMP.

Whatever the reason or severity, a failing system, or component, that may result in surface or groundwater contamination or a public health hazard, shall be corrected without delay under a valid OWTS permit issued by CDAEMD.

## **A. PROGRESSIVE FAILURE OF A LEACH FIELD**

As discussed in the previous section, a newly constructed leach field progressively fails through normal use over time. Every system is different, depending on the soil type and construction variables, as is every household's use of a system. Progressive failure(s) may take several years to many decades to completely

result in a failing leach field with sewage backups or surfacing onto the ground surface. The life span of a leach field system is unpredictable due to these variables. This progressive failure or diminished capacity is expected and is normal. This does not mean that the system is failing until liquid is no longer accepted into the soil. It does mean that the system is working as designed and as expected, yet reaches the end of its useful life. Short of excavating into a leach field, or measuring liquid levels in inspection wells into leach fields (when equipped), there is no accepted test that can demonstrate the degree toward which a system has progressed towards total failure or measure how the capacity of the leach field has diminished.

There are some simple things that can be done to limit or delay this diminished capacity by progressive failure and extend the life of a leach field or other Dispersal System. One inexpensive strategy is to install an outlet filter on a septic tank, which is required by CDAEMD. This filter will remove larger solids particles not removed in the septic tank to delay the formation of a thick, plugging Biomat in a Dispersal System. Another, more costly, strategy is to pressure dose the entire leach or Dispersal System equally. This will dose the entire Dispersal System equally instead of dosing only the first few feet of a leach line as has been the practice in the past. Many Alternate Dispersal Systems use one or both of these methods to extend the life span of Dispersal Systems by delaying the formation of a thick Biomat.

All OWTS require periodic pumping, inspections, or maintenance to keep the system in proper working order and assure adequate treatment of Effluent. Owners of property served by an OWTS must maintain their OWTS in good working order as failures may result in groundwater or local surface water contamination, health hazards, and costly corrective actions. Owners of OWTS that utilize a supplemental treatment shall contract with a Service Provider who is capable of operating, monitoring, and maintaining an OWTS in compliance with this LAMP and carrying out the appropriate inspections, maintenance, monitoring, and reporting required in the OWTS operating permit conditions.

## **B. CORRECTIVE ACTION REQUIREMENTS**

(OWTS Policy 3.3.1) (OWTS Policy 9.2.1) (OWTS Manual Section 4)

CDAEMD will conduct an investigation in a timely manner to determine the validity of an OWTS repair/replacement permit application, complaint report, or other notification of a failing OWTS or component, or the discovery of a Cesspool in use.

1. Upon receipt of a complaint report from a member of the public or a notification by a property owner or Service Provider, a violation file will be generated with an assigned tracking number.
2. Upon investigation and confirmation of a failing OWTS, CDAEMD will issue a Notice of Violation (NOV) directing the property owner to eliminate the immediate health hazard through pumping of the septic tank by a licensed septic tank pumper or by the elimination of wastewater flows from the structure. These actions shall continue until the system has been repaired/replaced and final approval granted by CDAEMD. If known, the NOV shall note why the system is failing and include specific corrective actions needed. CDAEMD will also require proper destruction of any Cesspool found in use by issuing a NOV directing abatement. A new OWTS will be required for use.

The Notice of Violation (NOV) shall require repairs to the OWTS, as needed, within a reasonable time frame. An inspection report or warning notice may also be issued to the



property owner at the time of the site inspection. Subsequently, a NOV detailing required corrective actions and time frames may be issued if the identified failure cannot be corrected immediately.

3. The proposed repair/replacement by a property owner and/or contractor in an OWTS Permit Application shall be evaluated by CDAEMD to ensure it meets the minimum design requirements of this LAMP or that the proposed repair is otherwise in substantial conformance to the greatest extent practicable.
4. Any OWTS component failure, other than those listed in 5 and 6 below, such as a broken distribution box or broken piping connection (a minor failure), shall have that specific component repaired in a timely manner, and inspected by CDAEMD, so the OWTS can return to proper functioning condition without the requirement to bring the entire OWTS into compliance with this LAMP.
5. In the event of failure of a septic tank (a major failure), such as a baffle, "tee," loss of structural integrity, or groundwater intrusion or sewage/Effluent discharge, CDAEMD will require that the septic tank be repaired or replaced to bring the tank into compliance with the septic tank specifications in this LAMP in a timely manner. An OWTS Permit application must be submitted and a permit must be issued by CDAEMD noting the corrections required. The system may not be backfilled or placed into use without an inspection and final approval from CDAEMD.
6. In the event of the failure of a Supplemental Treatment OWTS or an Alternate Dispersal OWTS (a major failure), the failing system and/or components shall be brought into compliance with this LAMP within a timely manner. Replacement of the failing system with a Standard OWTS or Special Design OWTS will be specified in an OWTS Permit issued by CDAEMD. The OWTS may not be backfilled or placed into use without an inspection and final approval from CDAEMD. Supplemental treatment may be required in situations where ground or surface waters have been impacted by the failing OWTS.

Failure of the septic tank, Supplemental Treatment OWTS, or Dispersal System may also lead to failure and required replacement of other components of the OWTS. Proper pumping, inspections, maintenance, and monitoring of the OWTS would be expected to reduce the frequency and severity of a failing component or multiple components.

7. Soil tests by a Qualified Professional may be required, at the discretion of CDAEMD, to properly characterize the site with a failing OWTS. Groundwater separation requirements from the bottom of the Dispersal System and the highest anticipated groundwater level for repairs are the same as those for newly constructed systems: minimum of five (5) feet (based on soil percolation rates) for standard systems and no less than two (2) feet for systems with Supplemental Treatment and/or an Alternate Dispersal System. Repairs must meet the LAMP requirements to the greatest extent practicable.
8. Required correction(s) shall be completed under permit and inspection from CDAEMD within specified time frames. No component of an OWTS shall be backfilled and placed into use until authorized in writing by CDAEMD staff after an inspection confirms substantial compliance with valid CDAEMD permit conditions and the standards in this LAMP.
9. Failure to complete the required corrective action within the time frames given will result in enforcement action which may include referral to the El Dorado County District Attorney or

Code Enforcement staff and could ultimately result in condemnation of the structure for immediate health hazard to residents and/or the public pursuant to Chapter 9.02.300.

10. CDAEMD will pursue, but cannot guarantee the availability of, potential funding for required corrective actions, such as the State Water Board's Clean Water Revolving Fund for mini-loans, and upon request, will advise property owners of other known funding sources depending on their situation.

### C. SUBSTANDARD SYSTEMS

The CDADSD process allows CDAEMD to evaluate sizing of an OWTS to ensure it is adequate for replacement residence or bedroom additions. Parcels with OWTS that are found to be substantially out of compliance with this LAMP shall be prohibited from having future additions to structures or other modifications to the property that would potentially increase wastewater flow to the OWTS or decrease the amount of useable area available for the OWTS. A new OWTS permit will be required to repair, replace, or add OWTS components to bring the system into compliance with this LAMP to the greatest extent practicable. The permit application would require any fees, test data, or system designs plans or specifications deemed necessary by the Director.

## SECTION 4. LAND DIVISIONS OF PARCELS SERVED BY OWTS

(OWTS Policies 9.1.1, 9.1.2, 9.1.5, 9.1.6, 9.1.7 and 9.4.10.4)

Prior to this LAMP, within El Dorado County, a site was required to have at least four (4) feet of soil and a minimum area for wastewater treatment dispersal to qualify for a land division when not served by public sewer. This LAMP will still allow the division of parcels with less than five (5) feet of soil to occur; however, supplemental treatment systems and/or Alternate Dispersal Systems may be required and leach fields will ultimately be much shallower than under previous standards to protect water quality.

### 1. Proposed Dispersal Area (OWTS Manual Section 1C)

<b>Table 1. Minimum Disposal Area based on Percolation Rate.</b>	
<b>PERCOLATION RATE (minutes/inch)</b>	<b>MINIMUM DISPOSAL AREA (square feet)</b>
Less than 10	6,000
11-20	8,000
21-40	10,000
41-60	12,000
61-80	14,000
81-100	16,000
101-120	18,000
Over 120	Not suitable for development

- a. Each parcel shall contain one or more dispersal areas, each consisting of minimum disposal area shown in Table 1 of useable dispersal material in locations which could reasonably be utilized by a structure built at a desirable location and feasible site.

- b. Dispersal area shall not include:
- (1) Land subject to flooding. In case of disputes concerning flooding potential, the flooded area shall be determined by calculating the expected 10-year frequency flood.
  - (2) Land closer than two hundred (200) feet to a lake or reservoir, measured from the high water line or one hundred (100) feet if down slope from the lake or reservoir.
  - (3) Land closer than two hundred (200) feet to any spring or one hundred (100) feet if downhill from the spring.
  - (4) Land within one hundred (100) feet of any existing or proposed private well site for the parcel or any adjoining parcel and two hundred (200) feet from public wells.
  - (5) Land closer than one hundred (100) feet to an intermittent, seasonal, or perennial waterway measured from the top of the bank or other physically evident high water line. An intermittent stream is one which may continue to flow for five days or more after the passage of a storm.
  - (6) Land closer than fifty (50) feet to an Ephemeral Stream, measured from the edge of a channel.
  - (7) Land closer than fifty (50) feet downhill from an irrigation ditch or canal.
  - (8) Land closer than fifty (50) feet uphill from an existing or proposed cut.
  - (9) Land with a grade steeper than 30%.
  - (10) Filled land, unless the fill is engineered for sewage dispersal and approved by CDAEMD.
  - (11) Gravel bars of very porous materials adjoining a stream or body of water.
  - (12) Land used for utility or road easements. Overhead utility easements may be included if the utility, entity, or agency holding the easement gives a permanent and irrevocable release, easement, or license for sewage dispersal within the easement.
  - (13) Dispersal System within twelve hundred (1,200) feet of Public Water System intake point.

## 2. Minimum Parcel Size

The average density for any subdivision of property made by Tentative Approval pursuant to the Subdivision Map Act occurring after the effective date of this LAMP shall not exceed the allowable density values in Table 2 for a single-family dwelling unit, or its equivalent, for those units that rely on OWTS.

<b>Table 2: Allowable Average Densities per Subdivision under Tier 1.</b>	
<b>Average Annual Rainfall (in/yr)</b>	<b>Allowable Density (acres/single family dwelling unit)</b>
0 - 15	2.5
>15 - 20	2
>20 - 25	1.5
>25 - 35	1
>35 - 40	0.75
>40	0.5

## 3. Dispersal Material Characteristics

Useable dispersal material has both the following characteristics:

- a. Percolation rates between one (1) and one hundred-twenty (120) minutes per inch when tests are conducted by the methods specified in the OWTS Manual (Section 1A) or Manual of Septic Tank Practice by the U.S. EPA.
- b. Depth to a seasonal water table shall be at least five (5) feet.

#### **4. Percolation Test, Test Pits, and Groundwater Monitoring**

- a. Percolation Tests. Four (4) percolation tests representative of the dispersal area shall be conducted on each proposed dispersal area.
- b. Test Pit. At least one test pit shall be excavated on each lot. The soil profile shall be logged by a person qualified to perform percolation tests and backfilled. CDAEMD staff must be present to observe test pit excavation.
- c. Groundwater Monitoring.
  - (1) The height of the seasonal high groundwater shall be determined by wet weather testing when any of the following is present:
    - (a) Vegetation tolerant of or indicative of a high water table present or in the vicinity of the parcel.
    - (b) High groundwater has previously been found in the vicinity.
    - (c) Other conditions or historical data preclude accurate determination of the groundwater levels.
    - (d) The test pit indicates less than five (5) feet of the dispersal material over an impervious stratum or eight (8) feet for lots less than one acre or for community leach fields.
    - (e) Free water from seepage is observed in the test pit.
  - (2) The height of the seasonal high groundwater shall be determined by actual measurements of observation wells during periods of maximum soil moisture content, after sufficient precipitation has occurred to meet or exceed field capacity of the soil, and produce a response in observation wells acceptable to CDAEMD.
    - (a) Direct Observation. Groundwater measurements shall be taken at the time and intervals specified by the CDAEMD in response to local conditions. Except as otherwise directed, measurements shall be taken at approximately monthly intervals from January 1 to April 30.

At least one observation well shall be included within each proposed dispersal area suspected of having groundwater less than five feet below the ground surface, except where a nearby monitoring well shows groundwater contours representative of the proposed dispersal area.

For a site to be acceptable for a Standard OWTS, the groundwater during the monitoring period shall not be less than five (5) feet below the ground surface. If this limit is exceeded on any observation, weekly observations shall be recorded throughout the remainder of the wet weather season to ensure that the standards are not exceeded for longer than any two-week period. The depth to groundwater shall never be less than two (2) feet on any observation. If seasonal rainfall up to the April 30 cutoff date has not exceeded 80% of the

normal rainfall, as determined by the nearest rainfall reporting station approved by the CDAEMD, during the period from December 1 to April 30, testing shall be continued the next year. However, CDAEMD may accept monitoring in years with less than the required amount of rainfall as long as the results appear to represent the highest groundwater depth for the site.

- d. All of the testing shall be done by, or under the supervision of, a Qualified Professional.

The results of all percolation tests and groundwater monitoring shall be reported and the logs of all excavations shall be submitted to CDAEMD. They shall be accompanied by a plot plan to scale showing the test, well, and pit locations. The map shall include two (2) foot contour intervals. The Director may disregard any test or log that, in his/her sole discretion, does not represent the soil conditions of the parcel. Logs or tests that do not appear to represent soil condition at the parcel may be rejected by CDAEMD.

## **5. Soil Analysis**

As an alternative to direct observation, an application may be submitted to CDAEMD for individual evaluations utilizing "Conditions Associated with Saturation."

- a. "Conditions Associated with Saturation" include:

- (1) Reddish brown or brown soil horizons with gray (Chromas of three or less) and/or red or yellowish red mottles;
- (2) Gray soil horizons, or gray soil horizons with red, yellowish red, or brown mottles;
- (3) Dark-colored highly organic soil horizons; or
- (4) Soil profiles with concentrations of soluble salts at or near the ground surface.

- b. If conditions associated with saturation do not occur in "Soil with Rapid or Very Rapid Permeability," saprolite, or fractured Bedrock, prediction of the highest level of the water table shall be based on direct observations.

- c. "Soil with Rapid or Very Rapid Permeability" means

- (1) Soil which contains 35% or more of coarse fragments two (2) millimeters in diameter or larger by volume with interstitial soil of sandy loam texture or coarser;
- (2) Coarse textured soil (loamy sand or sand and as classified in a Soil Textural Classification Chart);  
or
- (3) Stone, cobbles, gravel, and rock fragments with too little soil material to fill interstices larger than one (1) millimeter in diameter.

- d. Saprolite means weathered material underlying the soil that grades from soft thoroughly decomposed rock to rock that has been weathered sufficiently so that it can be broken in the hands or cut with a knife. It does not include hard Bedrock or hard fractured rock. It has rock structure instead of soil structure.

For a site to be acceptable under this method for a Standard OWTS, groundwater shall not be less than five (5) feet below the ground surface.

Lots less than one (1) acre in size or community dispersal fields shall be evaluated using either direct observation or soils analysis.

## **6. Limitations.**

- a. No lot shall be created for which a seepage pit is the only feasible method of sewage disposal.
- b. In subdivisions where no adequate impervious stratum lies beneath the one which may receive Effluent and above the useable groundwater, no lots shall be approved where the usable material beneath any leach line will be less than five (5) feet. An adequate impervious stratum exists if the stratum:
  - (1) Confines under pressure the usable groundwater so that wells drilled in it have a higher static water level at which the driller first encounters the water;
  - (2) Consists of material with a percolation rate slower than one hundred twenty (120) minutes per inch when tested by the method prescribed in the OWTS Manual or *Manual of Septic Tank Practice* by the U.S. EPA.; or
  - (3) Supports a perched water table.
- c. When potential is noted for inadequate treatment in the underlying or dispersal material prior to Effluent reaching usable groundwater or the surface, additional tests to prove that travel time is sufficient shall be done, or the project shall be recommended for disapproval and OWTS permits will not be approved.

#### **7. Lots created for uses which will not generate liquid wastes**

- a. Lots proposed and suitable for agricultural, commercial, industrial, or recreational uses that will not generate liquid wastes and do not require the regular presence of workers or employees are not subject to the dispersal area or testing requirements of the above portions of this subsection.
- b. Each of these parcels shall be identified on the recorded map with this statement: "This parcel is not approved for any use that will generate liquid waste. No permit to dispose of sewage or other liquid waste generated by the uses of this property will be issued until applicable provisions of state and local law and the LAMP and County Ordinance Chapter 110.32, as amended, have been complied with."

#### **8. Maps**

- a. Tentative.

All tentative maps shall show for each parcel the location, boundaries, and calculated square footage of the dispersal area(s). The calculations, as determined by the procedures of Section 4 of this LAMP, shall be submitted concurrently with the tentative land division application. If individual wells are proposed, the map shall show all existing and proposed well sites. Additionally, the map shall show proposed building envelopes and driveway locations. The map shall be to scale and show topography in the dispersal area at two (2) feet contour intervals and location of the test pits and percolation tests.
- b. Final and parcel maps.

For each parcel, the area(s) qualifying as dispersal area shall be clearly delineated and labeled on the final or parcel map. If individual wells are proposed, the map shall show all existing well sites with 100-foot setback radius clearly shown. Additionally, the map shall show proposed building envelopes and driveway locations. The map shall be to scale and show topography in the dispersal area at two (2) feet contour intervals and location of the test pits and percolation tests.

**SECTION 5. GROUNDWATER SEPARATION REQUIREMENTS FOR ONSITE WASTEWATER TREATMENT SYSTEMS AND OVERALL SOIL DEPTH DETERMINATIONS** (OWTS Policy 9.5) (OWTS Manual Section 1)

These requirements will be used for determining soil depths and groundwater levels when siting and designing OWTS on Existing Parcels to accomplish the following:

- Protect the groundwater quality by ensuring proper treatment of the sewage Effluent prior to its entering into groundwater.
- Protect the public health from failing OWTS caused by high groundwater.
- Provide a methodology for the evaluation of potential building sites using OWTS with regard to maintaining minimum groundwater separation requirements of the adopted State OWTS Policy.

**A. MINIMUM DEPTHS TO GROUNDWATER AND MINIMUM SOIL DEPTH FROM THE BOTTOM OF THE DISPERSAL SYSTEM** (OWTS Policy 9.4.8) (OWTS Manual Section 2)

Pursuant to the State OWTS Policy, the minimum depth to the anticipated highest level of groundwater below the bottom of the leaching trench, and the native soil depth immediately below the leaching trench, shall not be less than the following:

<b>Table 3. Native Soil Depth based on Percolation Rates.</b>	
<b>Percolation Rate:</b>	<b>Native Soil Depth</b>
Percolation Rate 1 to 5 MPI	Twenty (20) feet
Percolation Rate >5 to 30 MPI	Eight (8) feet
Percolation Rate >30 to 120 MPI	Five (5) feet
MPI = Minutes per Inch (the time it takes for a column of water to drop one (1) inch in a controlled percolation test).	

It is CDAEMD intent, through this LAMP, to allow installation of systems in soils between one (1) MPI and one hundred twenty (120) MPI.

For OWTS with Supplemental Treatment and/or for some Alternate Dispersal Systems, the required separation above may be reduced from that shown above but must not be less than two (2) feet. This reduction is allowed due to the level of pretreatment provided by the Supplemental Treatment and/or alternate Dispersal System to replace, or enhance, treatment of Effluent by soil.

Groundwater typically fluctuates seasonally depending on local geology and precipitation levels. Groundwater levels fall in response to drought and well extraction, and rise in response to precipitation, flood agricultural practices, and possibly irrigation from residential development. OWTS failures due to high groundwater result in sewage Effluent backing up into homes and/or surfacing on the ground creating public health hazards and can contribute to the contamination of potable groundwater and surface water resources.

The overall soil depth and depth to the highest anticipated groundwater level must be determined for each site proposed for an OWTS.

**B. SOIL PROFILE PITS** (OWTS Policy 9.1.1) (OWTS Policy 9.1.3) (OWTS Policy 9.1.5) (OWTS Policy 9.1.6) (OWTS Manual Section 1)

All parcels shall have soils tests to determine suitability for wastewater dispersal. This may include, depending on the type of OWTS proposed, soil profile pits, soil borings, and percolation tests and may require groundwater monitoring. The results of soil profile pits (test pits) and borings will assist in determination of site soil depth and the highest anticipated depth to groundwater. At least one test pit shall be excavated on each lot, the soil profile shall be logged by a Qualified Professional and then the test pit shall be backfilled. When unsafe site conditions or the depth is beyond what can be evaluated by a test pit, soil borings conducted by a Qualified Professional with experience in boring interpretation must be used to determine overall soil depth and depth to groundwater where deeper depths and unsafe site/soil conditions exist. All pits/borings will be excavated for examination by CDAEMD staff. Tests performed to create new parcels (land divisions) are discussed in Section 4 of this LAMP.

The soil profile or boring shall have enough information to allow a determination of whether or not groundwater is present and, if so, the highest anticipated depth to water and the overall depth of soil at the site.

1. Soil pits/borings are to be excavated a minimum of eight (8) feet in depth. Deeper borings to determine overall soil depth and depth to groundwater will be recommended if it is believed that soils at the site meet the minimum depth beneath the bottom of the Dispersal System for a Standard OWTS.
2. All soil profile pits and deep borings shall have soils described as follows:
  - For each pit or deep boring, identify the property owner, pit/deep boring number, the slope percent of the area of the pit/boring, the date logged, and the Qualified Professional logging the pit/boring.
  - All pit or deep boring logs, including failing pits/borings must be submitted to CDAEMD for review.
  - Within each pit/boring, from the surface to bottom of the excavation, the following must be provided for each horizon:
    - Depth of each horizon within the pit/boring
    - Color(s) within each horizon
    - Amount (by percent) and size of gravels
    - Soil texture
    - The number, size, and prominence of soil mottles, where present
    - Soil structure
    - Consistency
    - Boundary thickness between horizons

**C. GROUNDWATER MONITORING**

(OWTS Manual Section 1) (Ordinance 110.32.230)

The end result of test pits or soil borings is to have knowledge of the useable soil depth and depth to groundwater at the site. However, it is not always possible to determine the depth to seasonal water by observing soil pits or borings alone. When the highest anticipated depth to groundwater cannot be



determined with the use of test pits or soil borings, CDAEMD may require groundwater monitoring wells to be installed to determine the highest anticipated depth to groundwater. Groundwater monitoring wells may be indicated if the following conditions exist:

- Vegetation tolerant of, or indicative of, a high water table present on or in the vicinity of the parcel.
- High groundwater has previously been found in the vicinity.
- Other conditions or historical data preclude accurate determination of the groundwater levels by dry weather observations.
- The test pits indicate less than five (5) feet of disposal material over an impervious stratum.
- Free water seepage is observed in the test pit.

Maps showing the locations of monitoring wells constructed at the site, and the monitoring results, must be submitted to CDAEMD along with soil profile information and percolation test results. Groundwater monitoring, as with other soil tests, shall be conducted by a Qualified Professional.

The height of seasonal high groundwater shall be determined by actual measurements of observation wells during periods of maximum soil moisture content, after sufficient precipitation has occurred to meet or exceed field capacity of the soil and produce a response in observation wells acceptable to the CDAEMD.

## **1. Well Construction**

Groundwater monitoring wells, for OWTS purposes, are typically completed as follows:

- a. Soil profile test pits are converted to groundwater monitoring wells by placing a perforated pipe into the pit prior to backfilling with native soil.
- b. A hole is drilled or bored to a desired depth, a perforated pipe is placed into the hole, clean pea gravel is placed around the perforated pipe, and a surface concrete seal is placed.
- c. Well construction materials specifications:
  - Perforations will be engineered slots, rather than drilled holes;
  - Filter fabric will be used to cover the perforations in soil pits;
  - Use of solid pipe for the upper two (2) feet of the well is required;
  - A minimum of twelve (12) inches of concrete will be placed on the upper annular space of drilled/bored wells;
  - A minimum two (2) mil. plastic sheet may be draped over entire excavated area of a soil pit used as a monitoring well to exclude direct access of surface water into the backfilled pit.
  - At no time is a pit or bored/drilled hole to extend through a restrictive layer such as hardpan, Bedrock, impervious clay stratum, or similar layer.

## **2. Observation**

Groundwater monitoring well placement and depth must be representative of site conditions, soil percolation rate, and the type of OWTS proposed for the site. For example, a five (5) foot deep well is not adequate if you are proposing to install a Standard OWTS (no alternate treatment or Dispersal System) where the percolation rate at the site is between five (5) and thirty (30) MPI. These conditions would require eight (8) feet of soil beneath the bottom of a Dispersal System.

From December 1 to April 30, at least 80% of historical normal average rainfall must be received in the vicinity of the proposed OWTS for the monitoring data to be accepted by CDAEMD. The CDAEMD may accept monitoring in years with less than the required amount of rainfall as long as the results appear to represent the highest groundwater depth for the site.

Direct Observation measurements shall be taken at the times and intervals specified by CDAEMD in response to local conditions. CDAEMD may allow measurements to be taken at monthly/weekly intervals from January 1 to April 30.

At least one observation well shall be included within each proposed dispersal area suspected of having groundwater, where the groundwater depth cannot be determined by observation using a soil pit. Groundwater ideally would not be less than that specific depth required for the type of system proposed. Fill, engineered for soil dispersal of Effluent, may be placed to provide the necessary soil depth and separation from seasonal groundwater where at least one (1) foot of native soil is present.

If monthly depth measurements are within one (1) foot of the depth required for the specific type of system proposed, weekly observations shall be recorded throughout the remainder of the wet weather season to better define the seasonal water table.

### **3. Well Depth**

Wells should be constructed to a depth of at least (5) five feet, to a restrictive layer, or to depths deemed necessary for the type of system proposed at a site. In no case is a well to be constructed through a restrictive layer such as hardpan, Bedrock, impervious clay stratum, or similar layer. A log of soil strata encountered during well construction is to be submitted with the monitoring results.

The number, placement, and depth of wells should be specified by a Qualified Professional prior to construction.

### **4. Soil Analysis of Conditions Associated with Saturation**

As an alternative to direct observation, an application may be submitted to CDAEMD to evaluate individual sites where conditions associated with saturation exist. Section 4 of this LAMP provides guidance on assessing conditions associated with saturation.

### **5. Site Evaluation Procedures for Determination of Groundwater Using “Conditions Associated with Saturations”**

Applications for site evaluation shall be made to CDAEMD on approved forms. Each application must be signed by the owner or his legally authorized representative and accompanied by all required exhibits and appropriate fee. Incomplete applications will be rejected.

## **D. PERCOLATION TEST PROCEDURE**

(OWTS Policy 9.1.1) (OWTS Policy 9.1.3) (OWTS Policy 9.1.5) (OWTS Policy 9.1.6) (OWTS Policy 9.5)  
(OWTS Manual Section 1A)

This procedure establishes clear direction and methodology for percolation testing in El Dorado County. The objectives are to determine the area necessary to properly treat and disperse sewage underground; to size the OWTS with adequate infiltration surface area based on expected hydraulic conductivity of the soil and the loading rate; and to provide for a system intended to allow for a long-term expectation of satisfactory performance.

All percolation testing for Dispersal Systems shall be conducted through the use of these percolation test procedures. The tests shall be performed by or be under the supervision of a Qualified Professional. Any deviation shall be allowed only after receiving written approval by CDAEMD.

### **1. Percolation Test Hole Procedures**

#### **a. Number of Percolation Holes**

- (1) Four (4) tests are required
- (2) Additional tests may be required on a site specific basis for reasons that include the following:
  - (a) Unacceptable or failed tests
  - (b) Areas of the dispersal field requiring defined limits for exclusion
  - (c) The dispersal field is located out of a concentrated area
  - (d) Soil conditions are variable or inconsistent
  - (e) The need to verify suitable soil permeability beneath the chosen leach field depth

#### **b. Depth of Percolation Test Holes**

- (1) Percolation test-hole depth shall be representative of the proposed Dispersal System trench bottom depth or twelve (12) inches for systems such as an at-grade or drip Dispersal System.
- (2) For each lot of proposed land divisions (see LAMP Section 4), two (2) to three (3) tests are to be conducted at a depth of three (3) feet and the remainder at a depth of one (1) foot.
- (3) Conditions which may require percolation testing deeper than dispersal depth include:
  - (a) Consolidated rock or suspected impervious soil layers beneath the site;
  - (b) Slopes exceeding 30%;
  - (c) Other factors as might be determined by sound site evaluation practices.

#### **c. Location of Percolation Test Holes**

Percolation test holes shall be excavated in the area representing the proposed location of the Dispersal System or within an expected proposed disposal area of a proposed parcel to be created by a land division. Percolation tests shall be conducted in soils suitable for dispersal of Effluent that otherwise meet soil depth and groundwater depth for the type of system proposed for construction. Test holes shall be representative of the dispersal area demonstrating site conditions throughout the entire wastewater treatment system or proposed sewage dispersal area (land divisions) with equal consideration of primary and reserve Dispersal Systems.

#### **d. Identification of Percolation Test Holes**

- (1) When specifically requested, locations are to be staked and flagged so the test-hole locations can be located.

- (2) They are to be identified as to location on the site plan with:
  - (a) A test hole number or letter;
  - (b) Depth of the test hole; and
  - (c) Proposed lot/parcel number or letter if associated with a subdivision or other land use project requiring soil testing.
- e. Construction of Percolation Test Holes
  - (1) Diameter of percolation test holes shall be a minimum of six (6) inches.
  - (2) If a shallow backhoe excavation is used, a percolation test hole at twelve (12) to fourteen (14) inches in depth shall be excavated into the bottom of the backhoe bucket trench (the bottom of the percolation hole within this trench is to be at the percolation test-hole depth required for the project).
- f. Preparation of the Percolation Test Holes
  - (1) Scarify the sides and bottom of the holes, as needed, to remove the soil surface areas that became smeared by the auger or other tool used to excavate the hole.
  - (2) Remove as much loose material as possible from the hole.
  - (3) Add two (2) inches of clean pea gravel to protect the bottom from scouring.

## **2. Presoaking the percolation test holes**

- a. Procedure
  - (1) Carefully fill the test hole with a minimum of twelve (12) to fourteen (14) inches of clear water over the gravel or to the ground surface in shallower test holes.
  - (2) Refill the test hole as needed or otherwise maintain clear water in the hole for a minimum of four (4) hours. After four (4) hours, allow the water column to drop overnight. Testing must begin twenty-four (24) hours after water was first added to the hole.
- b. Saturation and swelling
  - (3) Saturation means that the void spaces between soil particles are full of water. This can be accomplished in a short period of time.
  - (4) Swelling is caused by the intrusion of water into the individual soil particles. This is a slow process, especially in clay-type soil, and is the reason for requiring a prolonged soaking.
  - (5) To prevent sloughing of the sidewall in unstable soils, the following options may be employed:
    - (a) Hardware cloth such as a one-eighth (1/8) inch grid; and
    - (b) Perforated pipe or other rigid liner.

## **3. Determination of Percolation Rates**

Depending on the soil type and permeability, and the results of the presoak, variations in the procedures used for determining percolation rates can be allowed. Testing shall proceed based on the conditions outlined in the following cases:

- a. Case 1- Water remains overnight in the test hole following initiation of the twenty-four (24) hour presoak.
  - (1) Adjust the depth of water over the gravel to six (6) inches.

- (2) Measure the drop in the water level over a single thirty (30) minute period and calculate the percolation rate.
- b. Case 2- No water remains twenty-four (24) hours after the presoak period was initiated.
  - (1) Begin the test twenty-four (24) hours after presoak was initiated.
  - (2) Fill the hole with six inches of water over the gravel. If, after the first two (2) fillings, the water column seeps away in less than thirty (30) minutes, go to Case 3. If water remains after thirty (30) minutes, complete the test by adjusting the water depth to six (6) inches over the gravel and record the drop at the end of every thirty (30) minute period.
  - (3) Including the first two (2) readings above, continue the readings and refill every thirty (30) minute interval for four (4) hours.
  - (4) The last water level drop is used to calculate the percolation rate.
- c. Case 3 - No water remains in the hole after the first two, thirty (30) minute periods.
  - (1) Refill the test hole to six (6) inches above the gravel.
  - (2) Record the water level drop at ten (10) minute intervals for a period of one (1) hour, refilling to the six (6) inch depth after each reading.
  - (3) The last water level drop is used to calculate the percolation rate.

**NOTE:** In all three of these cases, readings shall be taken from a fixed reference point and shall be accurate to 1/16 of an inch.

#### **4. Calculations and Measurements**

##### **a. Calculation Example**

The percolation rate is reported in minutes per inch. For example, a thirty (30) minute time interval with a 3/4 inch fall would be thirty (30) minutes divided by 3/4 inch equals forty (40) minutes per inch (MPI).

In the example of a ten (10) minute interval with a 2-inch drop, the calculation is ten (10) minutes divided by two (2) inch equals five (5) minutes per inch (MPI).

##### **b. Measurement Principles**

- (1) The time interval for readings are to reflect the actual times and are to be maintained as near as possible to the intervals outlined for the test (10 or 30 minutes).
- (2) Measurements to the nearest 1/16 inch should be adjusted to the slowest rate, e.g., a reading observed between 3/8 inch and 5/16 inch (80 MPI and 96 MPI) would be reported as the slower of the two, or 96 MPI.

#### **5. Special Considerations**

Percolation rate measurements are to be made from a fixed reference point and shall be from a platform that is stable and represents the center of the test hole. Percometer devices are encouraged and are required when conducting tests greater than sixty (60) inches below the ground surface.

- a. All test data and other required information is to be submitted to the CDAEMD on forms and in a format acceptable to the CDAEMD with appended data or information as needed.

- b. Reports shall be signed with an original signature from the Qualified Professional who either performed or supervised the testing.
- c. Qualified Professionals who employ technicians are responsible for the work performed by the technicians. It is incumbent upon the Qualified Professional to properly train, equip, and supervise anyone performing work under his or her direction and license.
- d. The percolation test is only one of several critical factors in siting an OWTS. Site considerations may require special evaluation by a Qualified Professional to technically address issues such as high groundwater, steep slope, nitrate impacts, and cumulative impacts such as mounding and loading.

## APPENDICES INDEX

- A. MAP EL DORADO COUNTY BOUNDARIES
- B. PORTER-COLOGNE CONCERNING SEWAGE DISPOSAL IN THE TAHOE BASIN
- C. DEFINITIONS

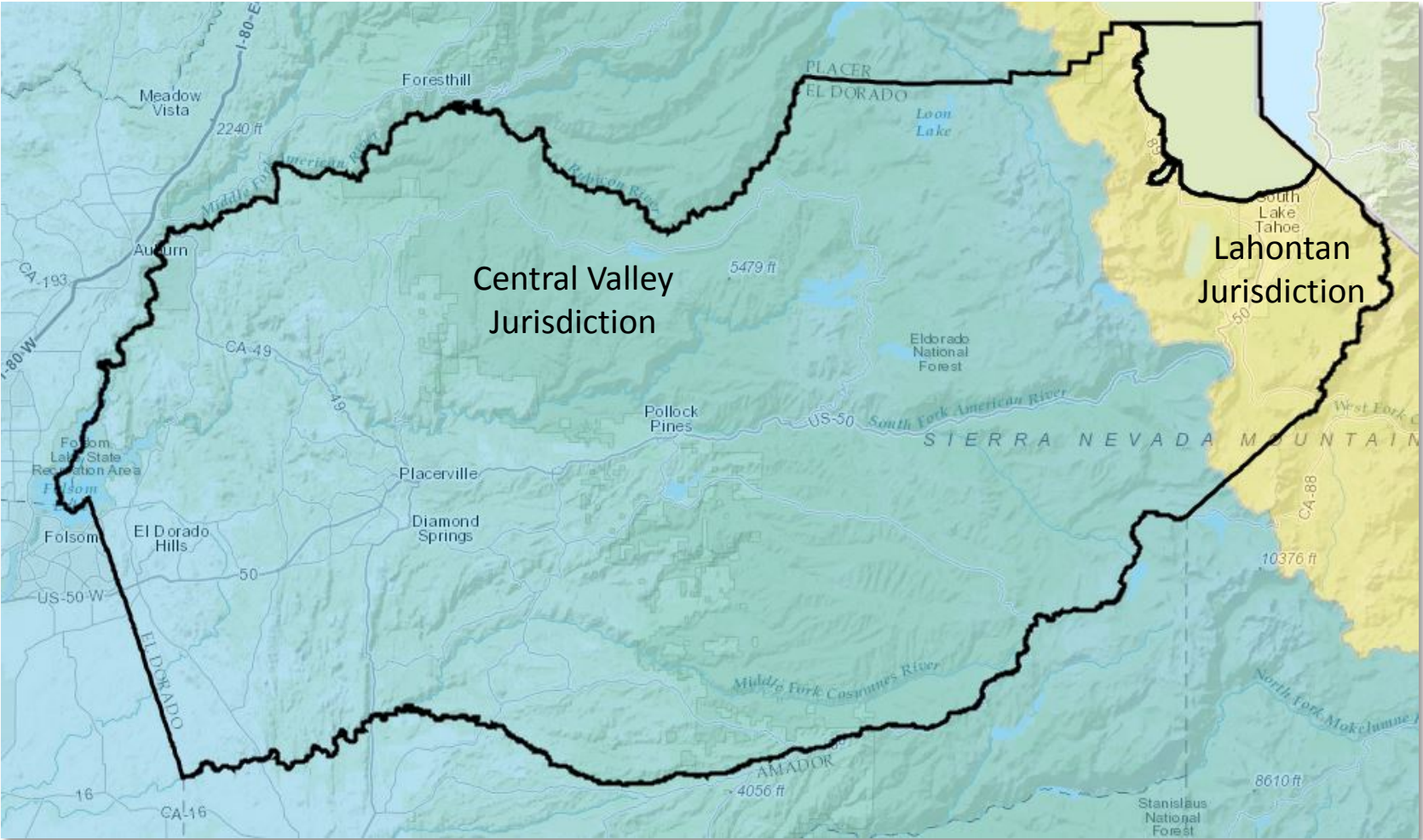
# APPENDICES

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## APPENDIX A

# Appendix A. County of El Dorado – Regional Water Quality Control Board Jurisdiction



— County Boundary



## APPENDIX B

EXCERPT FROM PORTER-COLOGNE

**Excerpt from Portor-Cologne**

**CHAPTER 12. SPECIAL WATER QUALITY PROVISIONS [13950. - 13952.5.]**

(Chapter 12 added by Stats. 1969, Ch. 800.)

**§ 13950.[Lake Tahoe Basin cesspools]**

Notwithstanding any other provision of law, upon any district in the Lake Tahoe Basin providing in any area of the district a sewer system and treatment facilities sufficient to handle and treat any resultant waste and transportation facilities sufficient to transport any resultant effluent outside the Lake Tahoe Basin, the further maintenance or use of cesspools or other means of waste disposal in such area is a public nuisance and the district shall require all buildings from which waste is discharged to be connected with the sewer system within a period of not less than 90 days from the completion of such system and facilities. (Added by Stats. 1969, Ch. 800.) §

**13951.[Exceptions]**

Notwithstanding any other provision of law, on or after January 1, 1972, waste from within the Lake Tahoe watershed shall be placed only into a sewer system and treatment facilities sufficient to handle and treat any such waste and transportation facilities sufficient to transport any resultant effluent outside the Lake Tahoe watershed, except that such waste may be placed in a holding tank which is pumped and transported to such treatment and transportation facilities.

As used in this section “waste” shall not include solid waste refuse.

The further maintenance or use of cesspools, septic tanks, or other means of waste disposal in the Lake Tahoe watershed on or after January 1, 1972, by any person, except as permitted pursuant to this section, is a public nuisance. The occupancy of any building from which waste is discharged in violation of this section is a public nuisance, and an action may be brought to enjoin any person from occupying any such building.

This section shall not be applicable to a particular area of the Lake Tahoe watershed whenever the regional board for the Lahontan region finds that the continued operation of septic tanks, cesspools, or other means of waste disposal in such area will not, individually or collectively, directly or indirectly, affect the quality of the waters of Lake Tahoe and that the sewerage of such area would have a damaging effect upon the environment.

This section shall not be applicable to any area or areas within the Fallen Leaf Lake watershed in the event the regional board for the Lahontan region finds that with the export of toilet wastes by single-family residences or with the export of toilet and kitchen wastes with respect to any commercial properties, the continued use of septic tanks, cesspools, or other means of waste disposal in such area or areas for the treatment and disposal of the remaining wastes, will not, individually or collectively, directly or indirectly, affect the quality of the waters of Lake Tahoe, and that the sewerage of such area or areas would have a damaging effect upon the environment.

This section shall not affect the applicability of Section 13950. (Amended by Stats. 1975, Ch. 637.)

**§ 13952.[Pilot reclamation projects]**

Notwithstanding the provisions of Sections 13950 and 13951, water containing waste which has been placed in a sanitary sewer system for treatment and transportation outside of the Lake Tahoe Basin may be reclaimed in a pilot reclamation project to demonstrate the technological and environmental feasibility of using such water for beneficial purposes within the Lake Tahoe Basin in accordance with the provisions of the Water Reclamation Law (Chapter 7 (commencing with Section 13500) of this division) and the provisions of this section.

Prior to the initiation of any pilot reclamation project within the Lake Tahoe Basin, the reclaimer or reuser shall submit the project with technical data to the regional board for the Lahontan region for approval. Only those projects submitted before January 1, 1984, shall be considered. The technical data submitted shall demonstrate that such pilot reclamation project will not, individually or collectively, directly or indirectly, adversely affect the quality of the waters of Lake Tahoe. The intended operational life of the project shall be at least 10 years.

No pilot reclamation project shall be initiated unless and until such regional board approves the project, and finds that such pilot reclamation project or projects will not, individually or collectively, directly or indirectly, adversely affect the quality of the waters of Lake Tahoe. The regional board for the Lahontan region shall place conditions on any approved 118 California State Water Resources Control Board Porter-Cologne Act and Related Water Code Sections (January 2016) project to include specification of maximum project size. The regional board for the Lahontan region may suspend or terminate an approved project for cause at any time. (Added by Stats. 1978, Ch. 682.)

**§ 13952.1. [South Tahoe Public Utility District; Luther Pass]**

(a) Notwithstanding Section 13951, the South Tahoe Public Utility District may provide recycled water only to prevent the destruction of its Luther Pass recycled water pump station from a catastrophic fire if all of the following conditions are met:

(1) The district submits an engineering report to the Lahontan Regional Board and the State Department of Public Health, as required by that regional board and that department.

(2) The Lahontan Regional Board, the State Department of Public Health, and the Tahoe Regional Planning Agency authorize the use of recycled water, and the specified area or areas in the immediate vicinity of the pump station where that recycled water may be used, only to prevent the destruction of the district's Luther Pass recycled water pump station from a catastrophic fire.

(3) The fire incident commander authorizes the use of the recycled water to prevent the destruction of the district's Luther Pass recycled water pump station from a catastrophic fire, as authorized pursuant to this section.

(b) For purposes of this section, "catastrophic fire" means a condition exists that will result in severe harm to life, property, and the environment if the use of recycled water as authorized pursuant to this

section is not used, and all other methods to extinguish the fire have been exhausted. (Amended by Stats. 2010, Ch. 288, Sec. 57. Effective January 1, 2011.)

**§ 13952.5. [Waste discharge requirements]**

The declared statewide interest in the preservation of Lake Tahoe, and the state and federal actions mandating the transportation of treated sewage effluent out of the Lake Tahoe watershed, requires that the law relating to the authority for prescribing waste discharge requirements for the effluent, and requirements pertaining to the storage of the effluent, the receiving waters, and the disposal areas, be clarified, and that law is hereby clarified and confirmed, to provide that, notwithstanding Section 13002 or any other provision of law, the regional board for the Lahontan region has exclusive authority to prescribe, under existing law, waste discharge requirements for treated sewage effluent transported out of the Lake Tahoe watershed to Alpine County within the Lahontan region, including requirements pertaining to the storage of the effluent, the receiving waters, and the disposal areas in Alpine County within the Lahontan region. However, any such action by that regional board is subject to review as provided in Sections 13320 and 13330. (Added by Stats. 1985, Ch. 447, Sec. 1.)

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## 5.8 WASTEWATER TREATMENT, EXPORT, AND DISPOSAL

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The Porter-Cologne Act (§ 13950-13952) includes specific language regarding domestic wastewater disposal in the Lake Tahoe Basin. It requires the export of all domestic wastewater from the California portion of the Lake Tahoe Basin; an Executive Order of the Governor of Nevada requires export on the Nevada side. The TRPA also prohibits the discharge of domestic, municipal, or industrial wastewater within its jurisdiction, with the types of exceptions noted below.

Under the Porter-Cologne Act, the Regional Board allows exceptions to the mandate for export for a small number of summer homes in remote areas of the Lake Tahoe Basin where sewerage would be environmentally damaging. Toilet wastes must be disposed to holding tanks, or incinerator toilets; holding tank wastes or ashes must be exported from the Lake Tahoe Basin (see the discussion of septage disposal in Chapter 4). Disposal of graywater (sink and shower wastes only) to leachfields may be allowed. Food wastes must be exported or incinerated. Garbage grinders, washing machines, dishwashers, and phosphate-based detergents are not allowed. Proper long-term maintenance of exempted facilities (both holding tanks and greywater systems) is very important. Regional Board staff should continue surveillance of these exempted facilities, and their exemptions should be revoked if the Regional Board cannot continue to find that they will not individually or collectively, directly or indirectly, adversely affect the quality of the waters of Lake Tahoe. The Forest Service periodically reviews its permits for summer home tracts. Regional Board staff should continue to review and comment on proposals for permit extensions, to ensure that wastewater issues are adequately addressed. The Regional Board shall make sure that the conditions of exemptions are complied with before extending the exemptions for septic system discharges. The Regional Board will also reconsider the exemptions in the light of technical advances permitting installation of low pressure sewers in environmentally sensitive areas.

Proper disposal of domestic wastewater from holding tanks and chemical toilets in boats and recreational vehicles is an issue of concern in the Lake Tahoe Basin. See the discussions of control measures for campgrounds and day use areas, and for impacts of

boating recreation in the section of this Chapter on recreational impacts, below.

Occasionally, existing structures in more urbanized areas of the Lake Tahoe Basin are found not to be connected to a sewer system. Wastewater collection and treatment agencies should continue to review records and use appropriate field methods to survey for unconnected wastewater discharges within their jurisdictions, and should inform Regional Board staff when such discharges are found. Where necessary, the Regional Board may use enforcement action to prevent discharges from unconnected structures. The Tahoe Regional Planning Agency requires all projects involving a new structure, or reconstruction or expansion of an existing structure, which is designed or intended for human occupancy, and which generates wastewater, to be served by facilities for the treatment and export of wastewater from the Lake Tahoe Basin. To be considered served, a service connection shall be required to transport wastewater from the parcel to a treatment plant.

The Porter-Cologne Act (§ 13952) allows the Regional Board to consider approval of pilot reclamation projects for the use of reclaimed domestic wastewater for beneficial purposes within the Lake Tahoe Basin, provided that such projects will not individually or collectively, directly or indirectly, adversely affect the quality of the waters of Lake Tahoe. The Regional Board shall place conditions on any approved project to include specification of maximum project size. The Regional Board may suspend or terminate an approved project for cause at any time.

In order to prevent raw sewage overflows, all sewerage agencies within the Lake Tahoe Basin are required to have preventative maintenance and spill response programs; enforcement actions may be taken if spills occur. Enforcement orders and grant conditions will require measures such as installation of monitoring equipment and any necessary reconstruction or relocation of sewerlines.

The Regional Board should continue to incorporate requirements for preventative maintenance and spill response programs into waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permits for all wastewater treatment agencies in the California portion of the Lake Tahoe Basin. These could include requirements for the installation of monitoring equipment, or for the reconstruction or relocation of defective sewerlines. If a sewerline has a series of overflows due to design deficiencies, it should be reconstructed. Bolted down, sealed manhole covers

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should be added to sewerlines that parallel the Lake Tahoe shoreline or are located in SEZs to prevent spills from exiting via loose manhole covers. In other areas, sewerlines in or adjacent to stream channels should be relocated to high ground and fitted with sealed manhole covers.

Grants, NPDES permits, and waste discharge requirements for wastewater collection and treatment facilities serving the Lake Tahoe Basin should be conditioned to prohibit the sewerage agencies from providing any connection serving new development which is not in accordance with this Basin Plan. This includes development which is not in compliance with the waste discharge prohibitions discussed in section 5.2 of this Chapter. State and federal buyout programs for sensitive lots include payment of wastewater treatment plant assessments for lots which cannot be built upon without violation of these prohibitions. The Regional Board shall require that the necessary information be submitted in reports of waste discharge to determine whether applications are consistent with the waste discharge prohibitions.

Due to aging infrastructure, the likelihood of exfiltration problems in the Tahoe Basin sewer systems may have increased since the early 1980s. Further study of **all** potential sources of nitrogen in Tahoe Basin ground water should be encouraged as part of the ongoing interagency monitoring program. Waste discharge requirements could be used to require correction of sewer exfiltration problems if such problems are shown to be significant in the future. Proposals for study and correction of exfiltration problems could be eligible for grant funding.

Waste discharge requirements for Tahoe Basin sewerage agencies should include a requirement that these agencies submit annual reports providing information needed to update estimates of available capacity, including information on flows, connections during the past year, and remaining unused treatment plant capacity.

The three sewerage agencies on the California side of the Lake Tahoe Basin also function as water purveyors. The State Board has directed that waste discharge requirements for these agencies should include conditions designed to prevent water use in the basin beyond the limits of the California-Nevada Interstate Water Compact (portions of this Compact which deal with the Lake Tahoe Basin were ratified by Congress in 1990 as PL 101-618).

The South Tahoe Public Utility District (STPUD) provides wastewater collection and treatment for the southern part of the Tahoe Basin in California, and

exports treated effluent to Alpine County, where it is stored and used for pasture irrigation. The North Tahoe Public Utility District (NTPUD) and Tahoe City Public Utility District (TCPUD) operate collection systems and export sewage for treatment and disposal by the regional Tahoe-Truckee Sanitation Agency (TTSA), located in Truckee in Nevada County. Chapter 4 of this Basin Plan contains additional information on the STPUD and TTSA facilities, including their operations outside of the Lake Tahoe Basin. The following is a summary of important issues related to these facilities and to the Tahoe Basin implementation program.

### ***South Tahoe Public Utility District***

The South Tahoe Public Utility District (STPUD) provides collection and treatment for municipal wastewater from most of the El Dorado County portion of the Lake Tahoe Basin. Wastewater is given advanced secondary treatment and pumped over Luther Pass to the East Fork Carson River in Alpine County, where it is stored in Harvey Place Reservoir and used for pasture irrigation.

### ***Tahoe-Truckee Sanitation Agency***

The regional wastewater treatment facilities of the Tahoe-Truckee Sanitation Agency (TTSA), located in Truckee in Nevada County, provide tertiary treatment for wastewater collected by the North Tahoe and Tahoe City Public Utility Districts in the Lake Tahoe Basin. (TTSA also serves other member districts outside of the Lake Tahoe Basin.) Wastewater is carried from member districts by an interceptor pipeline which generally parallels the Truckee River. TTSA's member districts formerly operated separate wastewater treatment plants but now operate and maintain collection facilities. Discharge prohibitions for the Truckee River Hydrologic Unit (HU), cited in the prohibition section of this Chapter, include prohibitions affecting further operation of these treatment plants, and discharges from septic tank/leachfield systems from current and future development in the portion of the HU within TRPA's jurisdiction. Additional information on TTSA's treatment and disposal operations in relation to water quality in the Truckee River HU is provided in Chapter 4 of this Basin Plan.

## 5.9 WATER RIGHTS AND WATER USE

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In 1988, there were approximately 57 water purveyors providing domestic supplies to development within the California portion of the Lake Tahoe Basin.

There were about 17 suppliers in California using over 100 acre-feet per annum (afa4). Water supplies are obtained from public and private wells, intakes from Lake Tahoe, and surface water diversions from tributaries. In the past, some water purveyors did not always treat well water prior to distribution, although chlorination might be provided at certain times of the year. Drinking water from surface intakes, both from streams and Lake Tahoe, has historically been filtered and chlorinated prior to distribution. New federal drinking water regulations require higher treatment levels for surface sources; because of these regulations, water purveyors are increasingly changing from surface to ground water sources.

Total water diversion for consumptive use in the Lake Tahoe Basin is limited by the California-Nevada Interstate Water Compact, an agreement which, after 13 years of negotiation, was ratified by the legislatures of both states in 1970 and 1971, and partly ratified by Congress in 1990 as P.L. 101-618. On the California side of the Lake Tahoe Basin, total diversions for consumptive use from all sources (both surface and ground waters) are limited to 23,000 afa.

The State Water Resources Control Board, which is responsible for administering California's water rights program, issued a *Report on Water Use and Water Rights in the Lake Tahoe Basin* in January 1980. The report determined that after water rights held by the USFS, State Parks requirements, and certain exports and depletions are taken into account, 19,000 afa is available for use on private lands on the California side of the Basin. The report also estimated the amount of water used at different levels of projected development.

The State Board has adopted a policy of limiting new water rights permits in accordance with the Compact allocation. The State Board does not have permit authority over all diversions, however. The largest group of diversions not subject to permit is ground water diversions, which made up 54% of the total diversions for use on the California side of the Lake Tahoe Basin in 1980. Local government has authority to regulate ground water pumping, and special ground water districts can be created, but current State law does not require local government

to act, even when ground water pumping exceeds available supply.

The water rights study recommended that the State Board issue new water rights permits subject to conditions which ensure that issuance of the permits will not result in use in excess of the amount available under the Interstate Water Compact. It further recommended that water available for use on private lands be allocated among three zones corresponding to the boundaries of the North Tahoe, Tahoe City, and South Tahoe Public Utility Districts. Water rights permits would be issued to the utilities, allowing them to divert amounts equal to the amount allocated to the zone minus the total of all other diversions, including ground water diversions, for use on private lands within the zone.

Current levels of consumptive water use in the Lake Tahoe Basin are unknown. (Most water use is not metered.) State law (AB 2572) enacted in 2004 requires all water suppliers to install water meters on all customer connections by January 1, 2025. New residential construction has occurred since 1982, but conservation efforts (e.g., landscape watering restrictions and requirements for ultra-low flow toilets) have increased due to drought conditions. As of 2010 there are fewer than 5000 private, undeveloped, potentially buildable parcels throughout all jurisdictions in the Lake Tahoe Basin. At the highest rate of residential building allowed by TRPA, 294 building allocations per year, these parcels could be built in 16 years.

The State Board's water rights report recommends that local and regional agencies involved in land use planning consider the limitations set by the Interstate Water Compact, and that the State's water quality program take the availability of water into account. The California Water Code directs the State and Regional Boards to take water supply into account during water quality planning, and in issuing waste discharge requirements. The public utility districts provide sewerage service, for which they are subject to waste discharge requirements issued by the Lahontan Regional Board. Any additional development in the Lake Tahoe Basin which will increase water use will not be possible without a connection to the sewerage system. The number of units which may connect to the sewerage systems is limited by sewage collection, treatment, and disposal capacity. Accordingly, this Basin Plan requires that waste discharge requirements issued for these sewerage systems include conditions designed to prevent water use in the Lake Tahoe Basin beyond the Compact limitations. The conditions could take several different forms, ranging from connection limitations to water conservation programs. The

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precise form the conditions shall take will be determined when waste discharge requirements are renewed or modified.

TRPA requires all projects proposing a new structure, or reconstruction or expansion of an existing structure designed or intended for human occupancy to have adequate water rights or water supply systems. TRPA cannot approve additional development requiring water unless it has, or provides, an adequate water supply within a water right recognized under state law.

TRPA recognizes that many water supply systems are in need of upgrading to insure delivery of adequate quantities of water for domestic and fire suppression purposes. Needed improvements include water lines, storage facilities, and additional hydrants. TRPA requires all additional development requiring water to have systems to deliver an adequate quantity and quality of water for domestic consumption and fire protection. Applicable local, state, federal, or utility district standards determine adequate fire flows, but where no such standards exist, the TRPA Code of Ordinances provides minimum fire flow requirements. TRPA may waive the fire flow requirements for its plan areas which are "zoned" for conservation and recreation uses, and for single family development if fire departments serving the development meet the requirements of the TRPA Code. Individual water suppliers will have to maintain their existing water supply systems, and upgrade them as appropriate to meet fire flow requirements, peak demand, and the need for backup supplies. Water suppliers will also have to provide treatment for drinking water from surface diversions in accordance with state and federal standards and regulations.

This Basin Plan provides exemptions from discharge prohibitions for public health and safety projects, including projects associated with domestic water supply systems. As noted above, new treatment requirements are leading to an increase in ground water diversions. New wells in SEZs may affect SEZ functions both through direct disturbance for construction of wells and distribution lines, and through the impacts of ground water drawdown on SEZ soils and vegetation. When considering exemptions from discharge prohibitions for new or expanded ground water diversions in SEZs, the Regional Board should evaluate the water quality impacts and "reasonableness" of these projects in relation to those of the alternative of continued use of a surface source, even if treatment costs are higher.

The remedial erosion control projects proposed in this Chapter require use of irrigation water for

revegetation. However, native plants will be used except for some temporary stabilization, and once established will not require irrigation. To ensure that the irrigation needed for revegetation can be carried out within the limits of water supply, the State Board's water rights decisions should reserve water for revegetation. Once it is determined that reserving water for revegetation is no longer necessary, the water can be made available for municipal and domestic use.

## APPENDIX - C. DEFINITIONS FOR PURPOSES OF THIS LAMP:

“303(d) List” means the same as “Impaired Water Bodies.”

“State OWTS Policy” or Policy means the OWTS Policy (Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems) adopted by the State Water Resources Control Board requiring the preparation of a Local Agency Management Plan (LAMP).

“Alternate Dispersal Systems” include shallow trench pressure distribution, mound, At-Grade System, drip dispersal, and other alternative Dispersal Systems approved by the Director. Some Alternate Dispersal Systems can be used without the need for a Supplemental Treatment system.

“At-Grade System” means an OWTS dispersal system with a discharge point located at the preconstruction grade (ground surface elevation) with qualifying fill material used to cover the Dispersal System. The discharge point of an At-Grade System is, therefore, always subsurface.

“Average Annual Rainfall” means the average annual amount of precipitation for a location over a year as measured by the nearest National Weather Service station for the preceding three decades. For example, the data set used to make a determination in 2015 would use the data from 1984 to 2013.

“Basin Plan” means the same as “water quality control plan” as defined in Division 7 (commencing with Section 13000) of the Water Code. Basin Plans are adopted by each Regional Water Board, approved by the State Water Board and the Office of Administrative Law, and identify surface water and groundwater bodies within each Region’s boundaries and establish, for each, its respective beneficial uses and water quality objectives. The Tahoe Basin Plan can be found in California Health & Safety Code sections 13950 to 13952.5.

“Biomat” is a bacterial slime layer which forms in soil at the bottom of leach lines and other Dispersal Systems. It is responsible for much of the treatment and reduction of biological solids and bacteria present in onsite wastewater treatment system Effluent (from either a septic tank or Supplemental Treatment system) discharged to the soil.

“CEDEN” means California Environmental Data Exchange Network and information about it is available at the State Water Boards website or <http://www.ccdan.org/index.shtml>.

“Cesspool” means an excavation in the ground receiving domestic wastewater, designed to retain the organic matter and solids, while allowing the liquids to seep into the soil. Cesspools differ from seepage pits because cesspool systems do not have septic tanks and are not authorized under this LAMP. The term cesspool does not include pit-privies and out-houses which are not regulated under this LAMP.

“Chroma” is a measure of color purity in the Munsell color system.

“Clay” means a soil particle; the term also refers to a type of soil texture. As a soil particle, clay consists of individual rock or mineral particles in soils having diameters <0.002 mm. As a soil texture, clay is the soil material that is comprised of 40 percent or more clay particles, not more than 45 percent sand and not more than 40 percent silt particles using the USDA soil classification system.

“Cobbles” means rock fragments 76 mm or larger using the USDA soil classification system.

“Curtain drain or French drain” is a gravel trench that is excavated down to a relatively impermeable soil layer and installed to intercept, collect, and remove shallow subsurface groundwater as it flows above the impermeable layer.

“Cut” means any altered area of land surface having a distinctly greater slope than the adjacent ground surface, over 24 inches in vertical height or the OWTS Dispersal System backfill cover depth, whichever is greater, and any part of which is lower in elevation than the ground surface at the nearest point of the OWTS. Cuts supplied by retaining walls or other similar structures shall be included in this definition, as shall be steep natural ground surfaces where a sharp break in the ground slope is discernable.

“Director” means the Division Director of Environmental Management or his/her designee in the El Dorado County Environmental Management Division of the Community Development Agency.

“Dispersal system” means a leachfield, seepage pit, mound, at-grade, subsurface drip field, evapotranspiration and infiltration bed, or other type of system for final wastewater treatment and subsurface discharge.

“Domestic Wastewater” means wastewater with a measured strength less than high-strength wastewater and is the type of wastewater normally discharged from, or similar to that discharged from, plumbing fixtures, appliances, and other household devices including, but not limited to toilets, bathtubs, showers, laundry facilities, dishwashing facilities, and garbage disposals. Domestic wastewater may include wastewater from commercial buildings, such as office buildings, retail stores, and some restaurants, or from industrial facilities where the Domestic Wastewater is segregated from the industrial wastewater. Domestic Wastewater does not include industrial wastewater or wastewater consisting of a significant portion of RV holding tank wastewater such as at RV Dump Stations.

“Domestic Well” means a groundwater well that provides water for human consumption and is not regulated by the California Department of Public Health.

“Dump Station” means a facility intended to receive the discharge of wastewater from a holding tank installed on a recreational vehicle. A Dump Station does not include a full hook-up sewer connection similar to those used at a recreational vehicle park.

“Earthen material” means a substance composed of the earth’s crust (i.e. soil and rock).

“EDF” or “Electronic Deliverable Format” means the data standard adopted by the State Water Board for submittal of groundwater quality monitoring data to the State Water Board’s internet accessible database system GEOTRACKER (<http://geotracker.waterboards.ca.gov>).

“Effluent” means sewage, water, or other liquid, partially or completely treated or in its natural state, flowing out of a septic tank, aerobic treatment unit, Dispersal System, or other OWTS component.

“Engineered fill” means a designed placement of specified imported soil over existing native soils on an existing parcel with inadequate soil depth to meet the minimum two (2) to three (3) feet of soil depth required beneath a Dispersal System and a minimum of two (2) to three (3) feet of separation between the bottom of a Dispersal System and a water table.

“Ephemeral Stream” means a stream, or other drainage such as a roadside ditch, that flows for less than five (5) days after the passage of a storm. An ephemeral stream only carries water in direct response to a precipitation event and it contains no water from a spring, snow, or other long-continuing surface source and does not discharge to a perennial aquifer. Setback measurements are made from the edge of the channel.

“Existing OWTS” means an OWTS in which a valid construction permit has been issued or that was constructed and operated prior to the effective date of this LAMP.

“Existing Parcel” means any vacant or developed parcel that was in existence prior to effective date of this LAMP.

“Failure” means the ineffective dispersal of waste resulting in the surfacing of sewage or inadequately treated sewage Effluent and/or the degradation of surface or groundwater quality.

“GeoTracker” is the SWRCB data management system for managing sites that impact groundwater, especially those that require groundwater cleanup.

“Gleyed soils” are soils developed under conditions of poor drainage and can generally be found as surface water and ground water gleys.

“Groundwater” means water that is below the land surface that is at or above atmospheric pressure.

"High-strength wastewater" means wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) greater than 300 milligrams-per-liter (mg/L) or of total suspended solids (TSS) greater than 330 mg/L or a fats, oil, and grease (FOG) concentration greater than 100 mg/L prior to the septic tank or other OWTS treatment component.

“Holding Tank” means a watertight receptacle used to collect and store wastewater prior to it being removed from a property by means of vacuum pumping and hauling or another approved method.

“IAPMO” means the International Association of Plumbing and Mechanical Officials.

“Impaired water bodies” means those surface water bodies or segments thereof that are identified on a list approved first by the State Water Board and then approved by the U.S. EPA pursuant to Section 303(d) of the federal Clean Water Act.

“Intermittent sand filter” means a packed-bed filter of medium-grained sand used to treat septic tank Effluent to an advanced level. Wastewater is dosed to the surface of the sand through a pressure-distribution network and allowed to percolate through the sand where BOD is reduced and suspended solids are removed; treatment is accomplished by physical filtration as well as microbial growth on the surface of the sand grains. After a single pass, the Effluent is collected in an underdrain system for further processing or dispersal.

“Irrigation ditch or canal” means a man-made lined or unlined ditch intended to supply dry land with water and must meet the setbacks specified for ephemeral, intermittent, or seasonal Drainage Ways except as allowed otherwise.

“Local Agency Management Plan” or “LAMP” means this document to be used for siting, evaluation, design, operation, and management of onsite wastewater systems within El Dorado County, in conjunction with El Dorado County Ordinance Chapter 110.32 and the OWTS Manual.

“Major repair” means either (1) for a dispersal system, repairs required for an OWTS dispersal system due to surfacing wastewater Effluent from the dispersal field and/or wastewater backed up into plumbing fixtures because the dispersal system is not able to percolate the design flow of wastewater associated with the structure served; or (2) for a septic tank, repairs required to the tank for a compartment baffle failure or tank structural integrity failure such that either wastewater is exiting or groundwater is infiltrating.

“Minor repair” means a failure of a component other than a septic tank, treatment system, or dispersal system such as a distribution box or broken piping connection.

"Mottles" means a soil condition that results from oxidizing or reducing minerals due to soil moisture changes from saturated to unsaturated over time. Mottling is characterized by spots or blotches of different colors or shades of color (grays and reds) interspersed within the dominant color as described by the USDA soil classification system. The soil condition can be indicative of historic seasonal high groundwater level, but the lack of this condition may not demonstrate the absence of groundwater.

“New OWTS” means an OWTS permitted after the effective date of this LAMP.

“NSF” means NSF International (a.k.a. National Sanitation Foundation), a not for profit, non-governmental organization that develops health and safety standards and performs product certification.

“Onsite wastewater treatment system(s)” or “OWTS” means individual treatment and dispersal systems, community treatment and dispersal systems, and alternative treatment and dispersal systems that collect and treat wastewater for subsurface dispersal. The short form of the term may be singular or plural. OWTS do not include “gray water” systems pursuant to Health and Safety Code section 17922.12.

“Perennial Waterway” is a stream or other drainage which has continuous flow in all or parts of its stream bed all year during normal rainfall years but may flow only intermittently in drought years.

“Percolation test” means a method of testing the water absorption ability of the soil. The test is conducted with clean water and test results are used to establish a percolation rate and facilitate the dispersal system sizing and design.

“Permeable soil” means soil that has a percolation rate of 120 minutes per inch or faster or having a clay content of less than 60 percent and does not contain solid rock formations or rock formations that contain continuous channels, cracks, or fractures.

“Permit” means a written document issued by CDAEMD that allows the construction, installation, use, repair, expansion, replacement, or destruction of an existing OWTS or any part thereof.



“Pollutant” means any substance that alters the waters of the State to a degree that it may potentially affect the beneficial uses of water, as listed in, but not limited to, a Basin Plan.

“Portable Toilet” means an enclosed unit intended for temporary use at a given location. Portable Toilets may also be referred to as “chemical toilets” in other county ordinances or California statutes or regulations.

"Precipitation" means measureable amounts of rain, snow, hail, and other similar natural phenomenon.

“Projected flow” means wastewater flows into the OWTS determined in accordance with any applicable methods for determining average daily flow as approved by the Director.

“Public Water System” is a water system regulated by the California Department of Public Health or a Local Primacy Agency pursuant to Chapter 12, Part 4, California Safe Drinking Water Act, Section 116275 (h) of the California Health and Safety Code.

“Public Water Well” is a ground water well serving a Public Water System. A spring which is not subject to the California Surface Water Treatment Rule (SWTR), CCR, Title 22, and Sections 64650 through 64666 is to be considered a public water well.

“Qualified Professional” means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists certified by the Soil Science Society of America are considered Qualified Professionals. Qualified Professionals must have the education and experience necessary to conduct onsite surveys for OWTS suitability, evaluate potential pathways of wastewater-sourced phosphate and other nutrients toward potentially threatened nearby wells or surface bodies of water, consider hydraulic mounding and linear loading at the site, complete all necessary soils tests, prepare system designs and drawings, meet with owners and installers, and conduct necessary inspections. No other person, license, or registration/certification will be approved as a Qualified Professional.

“Replacement Area” or “Repair Area” means an area that is one hundred (100) percent in size of the area approved for the initial sewage system disposal field for a residence and three hundred (300) percent in size of the area approved for the initial sewage system disposal field for others.

“Replacement OWTS” means an OWTS that has its treatment capacity expanded, or its dispersal system replaced or otherwise added onto, after the effective date of this LAMP. An OWTS may be replaced for a variety of reasons including failure, home additions increasing the number of occupants/water use, relocation to accommodate home additions, home sales, and other reasons.

“Sand” means a soil particle; this term also refers to a soil texture. As a soil particle, sand consists of individual rock or mineral particles in soil having diameters ranging from 0.05 mm to 2.0 mm. As a soil texture, sand is soil that is comprised of 85 percent or more sand particles, with the percentage of silt plus 1.5 times the percentage of clay particles comprising less than 15 percent.

“Seepage pit” means a vertical excavation constructed to receive Effluent from a septic tank. As the adopted State OWTS Policy requires a minimum of ten (10) feet of adequate soil and separation between the bottom of the pit and highest anticipated groundwater level and increased horizontal separation distances, it is not anticipated that permits will be issued for their construction and use in El Dorado County.

“Septic tank” means a water tight, covered receptacle designed for primary treatment of wastewater and constructed to:

1. Receive wastewater discharged from a building or other use;
2. Separate settleable and floating solids from the liquid;
3. Digest organic matter by anaerobic bacterial action;
4. Store undigested solids; and
5. Clarify wastewater for further treatment/subsurface discharge.

“Service Provider” means a person capable of operating, monitoring, and maintaining an OWTS in accordance with this LAMP.

“Site” means the location of the OWTS and, where applicable, a reserve dispersal area capable of disposing of 100 percent of the design flow from all sources the OWTS is intended to serve.

“Site Evaluation” means an assessment of the characteristics of the site and onsite soils sufficient to determine suitability for an OWTS to meet the requirements of this Policy.

“Site Plan” means a site plot plan showing all details required under this LAMP, including all existing topographic features, the locations of all required soil tests, and all proposed site grading, structures and other existing/planned improvements.

“Slope” means the rise or fall of vertical elevation in feet, per one hundred (100) feet of horizontal distance. Slope is expressed as a percent of grade. For example, a rise of 30 feet in a 100 foot run is a 30 percent slope. A rise of 40 feet in a 100 foot run is a slope of 40 percent.

“Soil” means the naturally occurring body of porous mineral and organic materials on and at the land surface, which is composed of unconsolidated materials, including sand-sized, silt-sized, and clay-sized particles mixed with varying amounts of larger fragments and organic material. The various combinations of particles differentiate specific soil textures identified in the soil textural triangle developed by the United States Department of Agriculture (USDA) as found in Soil Survey Staff, USDA; *Soil Survey Manual, Handbook 18*, U. S. Government Printing Office, Washington, DC, 1993, p. 138. For purposes of this LAMP, soil shall contain earthen material of particles smaller than 0.08 inches (2mm) in size. For the purposes of this LAMP, soil is the ultimate receiver of wastewater and the most important part of an OWTS. Therefore, in addition to the depth to groundwater, the proper evaluation of soil structure, permeability, and overall useable soil depth is critical in the proper choice and design of an OWTS for any particular site.

“Soil Profile” is a natural sequence of layers, or horizons, in the soil as described in a suitable manner acceptable to CDAEMD.

“Soil Structure” means the arrangement of primary soil particles into compound particles, peds, or clusters that are separated by natural planes of weakness from adjoining aggregates.

“Soil Texture” means the soil class that describes the relative amount of sand, silt, and clay and combinations thereof as defined by the classes of the soil textural triangle developed by the USDA.

“Special Design OWTS” is an OWTS that does not meet the criteria for a Tier 1 Standard OWTS.

“Standard Onsite Wastewater Treatment System” means an OWTS constructed in soil meeting Tier 1 specifications. A Standard OWTS consists of a septic tank and a series of subsurface dispersal trenches for subsurface dispersal of Effluent into the soil. A Standard OWTS may utilize gravity flow or a pump system to convey Effluent from the septic tank to the drain field.

“Substandard System” means any Existing OWTS that does not conform to the system sizing, setbacks, soil depth, or groundwater separation requirements of this LAMP.

“Supplemental Treatment” means any OWTS or component of an OWTS, except for a septic tank or dosing tank, that performs additional wastewater treatment using intermittent and recirculating sand filters, proprietary treatment units, and other alternative treatment systems approved by the Director, so that the Effluent meets a predetermined performance requirement prior to discharge of the Effluent into the dispersal field. Some Supplemental Treatment units are passive and can be placed directly onto a leach bed for direct dispersal into the soil.

“SWAMP” means Surface Water Ambient Monitoring Program and more information is available at [http://www.waterboards.ca.gov/water\\_issues/programs/swamp/](http://www.waterboards.ca.gov/water_issues/programs/swamp/).

“TMDL” is the acronym for “total maximum daily load.” Section 303(d)(1) of the Clean Water Act requires each state to establish a TMDL for each impaired water body to address the pollutant(s) causing the impairment. In California, TMDL’s are usually adopted as Basin Plan amendments and contain implementation plans detailing how water quality standards will be attained.

“USDA” means the U.S. Department of Agriculture.

“Waste Discharge Requirement” or “WDR” means an operation and discharge permit issued for the discharge of waste (including OWTS Effluent) pursuant to Section 13260 of the California Water Code.