County of Alpine

Local Area Management Program (LAMP)

Onsite Wastewater Treatment Systems

4/15/2019

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CHAPTER 1: Introduction

The Local Area Management Program (LAMP) is the required end result of California Assembly Bill 885, which directed the State Water Resources Control Board (State Water Board) to develop uniform, statewide standards for onsite wastewater treatment systems (OWTS). The State Water Board adopted the Water Quality Control Policy for Siting, Design, Operation and Maintenance on Onsite Wastewater Treatment Systems (OWTS Policy) on June 19, 2012 and it became effective on May 13, 2013. The OWTS Policy allows local agencies to approve OWTS, based on a local ordinance and upon approval of the LAMP by their respective Regional Water Quality Control Boards (Regional Water Board). For Alpine County, their respective Regional Water Board is the Lahontan Regional Water Quality Control Board (Lahontan Water Board).

The OWTS Policy establishes a tiered approach whereby, Tier 0 authorizes existing OWTS; Tier 1 establishes minimum standards for low risk new or replacement OWTS; Tier 2 allows for development of conditions specific to Alpine County, and these LAMPs must be approved by the appropriate Regional Water Board; Tier 3 applies special, enhanced standards to both new and existing OWTS located near a water body that has been listed as impaired due to nitrogen or pathogens pursuant to Section 303(d) of the Clean Water Act; Tier 4 applies to existing OWTS that have or are failing. Once approved, the standards contained in an approved LAMP supersede the Tier 1 standards. The LAMP is intended to be Alpine County's primary instrument for siting OWTS within Alpine County.

Discharges of waste are regulated through the use of Waste Discharge Requirements (WDRs) issued by the Water Boards that act as discharge permits. With regard to the regulation of wastewater in Alpine County, the Lahontan Water Board and the Central Valley Regional Water Quality Control Board (Central Valley Water Board) issue discharge permits to the municipalities, special districts, or individuals (Person) that operate domestic wastewater (sewage) treatment plants in the County of Alpine (County). In addition, they issue permits for the use of recycled wastewater.

The State's regulatory authority extends to individual OWTS; therefore, general guidelines for the siting, design and construction of new OWTS were part of the OWTS Policy and each Regional Board's Basin Plan (Basin Plan). The State Water Board and the Regional Water Boards recognized the advantages and efficiencies of regulation of such systems by local agencies. Consequently, while the Regional Boards retained primacy over large and some specialized systems, direct regulatory authority for individual OWTS has, prior to the OWTS Policy, been delegated to individual counties through Memorandums of Understanding. This LAMP supersedes any prior Memorandum of Understanding with regard to OWTS.

The implementation of this LAMP will allow the continued use of OWTS within Alpine County, as well as to expand the local program to permit and regulate alternative OWTS, while protecting

water quality and public health. The LAMP also applies to OWTS on federal and state lands, to the extent authorized by law or agreement.

The LAMP is designed to protect groundwater and surface waters from contamination through the proper design, placement, installation, maintenance, and assessment of individual OWTS. This LAMP develops minimum standards for the treatment and ultimate disposal of sewage through the use of OWTS in Alpine County. The LAMP does not regulate or otherwise include the following which require the owner to file a report of waste discharge with the Lahontan Water Board and obtain WDRs (or waiver of WDRs):

- Any OWTS designed for multiple dwelling units or commercial developments with a projected wastewater flow of over 500 gallons per day per acre;
- Any OWTS with a projected wastewater flow of over 10,000 gallons per day;
- Any OWTS that receives industrial or high strength wastewater;
- Any OWTS with a Biochemical Oxygen Demand (BOD) higher than 900 milligrams per liter (mg/l);
- Projects utilizing packaged wastewater treatment plants with onsite disposal;
- Any discharge to surface waters.

It is the intent of the County Board of Supervisors, in adopting this plan, to ensure that OWTS are constructed, modified, repaired, abandoned, operated, maintained, inspected and serviced in a manner that prevents environmental degradation and protects the health, safety and general welfare of the people of the County. This LAMP conforms to all of the applicable Tier 2 criteria listed in §9 of the OWTS Policy including requirements in §9.4 to adhere to the applicable Basin Plan "prohibitions."

The standards for existing and new OWTS are specified in the OWTS Policy, the California Plumbing Code, Appendix H & K; the USEPA Design Manual – Onsite Wastewater Treatment and Disposal Systems; the Manual of Septic Tank Practice published by the U.S. Department of Health, Education and Welfare (1975); and Alpine County Code, Chapter 13.08.

OWTS, including conventional septic systems, require routine maintenance in order to ensure that they function properly and to extend the life of the system. While this LAMP does not require mandatory maintenance or reporting for conventional systems, regular maintenance and reporting will be required for all alternative or supplemental treatment systems.

The provisions of this LAMP will apply to all areas that Alpine County maintains jurisdiction.

While every effort was made to make this LAMP comprehensive, it is likely that it will be necessary to modify it in the future for several reasons. Section 9.3.3 of the OWTS Policy requires that a jurisdiction complete an evaluation of its monitoring program every five (5) years to determine if water quality is being impacted by OWTS, and whether modifications must be made to its LAMP to address any noted water quality impacts. If changes are necessary, those changes will be made after consultation with the Lahontan and Central Valley Water

Boards. If changes are substantive, the County Environmental Health Department (EHD) will return to the Alpine County Board of Supervisors for approval.

Chapter 2: Definitions

Alternative OWTS: is a type of OWTS that utilizes a method of wastewater disposal other than a conventional drain field trench/bed, for the purpose of producing a higher quality effluent and improved performance of siting options for effluent dispersal. Alternative waste disposal systems include, but are not limited to, mound systems, evapotranspiration beds, and sand filters.

At-Grade System: means an OWTS dispersal system with a discharge point located at the preconstruction grade (ground surface elevation). The discharge from an at-grade system is always subsurface. At-grade systems are engineered systems requiring a Registered Civil Engineer stamped design that conforms to guidelines for at-grade systems established by EHD and the guidelines in this LAMP.

Average Annual Rainfall: the average of the annual amount of precipitation for a location 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 2012 would be the data from 1981 to 2010.

Basin Plan: means the same as "water quality control plan" as defined in Division 7 (commencing with §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 (BU) and WQOs. Copies are available from the Regional Water Boards, electronically at each Regional Water Board's website, or at the State Water Board's Plans and Policies web page (http://www.waterboards.ca.gov/plans_policies/).

Bedrock: the rock, usually solid, that underlies soil or other unconsolidated, surficial material.

Cesspool: 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.

Cut/Slope: any slope greater than 60% or man-made contour that exposes the vertical soil profile. Cuts and slopes require a 5 foot horizontal setback for every 1 foot of vertical height to any dispersal system.

Dispersal System: means a leach field leach bed, mound system at-grade system, 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, restaurants, or from industrial facilities where the domestic wastewater is segregated from the industrial wastewater. Domestic wastewater does not include wastewater from industrial processes.

Domestic Well: a groundwater well that provides potable water for human consumption.
Drain Field: a system of trenches or beds that distribute treated effluent for subsurface disposal into the soil. A drain field is also known as a "leach field" or "soil absorption area".
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.
Equivalent Dwelling Units (EDUs): are defined as a unit of measure used for sizing a development based on the amount of waste generated from that development; the value used in implementation of these criteria is 250 gpd per EDU. For purposes of these criteria, a single-family dwelling is equal to one EDU.
Existing OWTS: means an OWTS that was constructed and operating prior to the effective date of the OWTS Policy, and OWTS for which a construction permit has been issued prior to the effective date of the OWTS Policy (May 13, 2013).
Flowing Water Body: means a body of running water flowing over the earth in a natural water course, where the movement of the water is readily discernible or if water is not present it is apparent from review of the geology that when present it does flow, such as in an ephemeral drainage, creek, stream, or river.
Groundwater: means water 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: a watertight receptacle used to collect and store wastewater prior to it being removed from the property by vacuum pump or hauling. The use of holding tanks in Alpine County may only be allowed if specifically approved by the local enforcement agency, for the abatement of immediate health hazards or for temporary use at certain public facilities.
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 US EPA pursuant to Section 303(d) of the federal Clean Water Act.
Infiltrative Area: means the area of infiltrative surface below the OWTS disposal system, expressed in terms of square-feet per linear-foot, and calculated as multiplying the cross-sectional perimeter of the disposal trench by the linear feet of the disposal line. The cross-sectional perimeter is calculated by adding the disposal line trench bottom width to the effective sidewall height for each side. Effective sidewall height excludes the first foot on each side below the disposal line. In lieu of the OWTS Policy's defined infiltrative area of 4 square-feet per linear foot, Alpine County will allow a maximum of 7 square-feet per linear foot.
Intermittent Sand Filter: an alternative OWTS using a bed filter of medium grained sand to treat septic tank effluent to a secondary level. The wastewater is dosed to the surface of the sand via a pressure distribution system, which may be enclosed with a bottom, or bottomless. Any proposed intermittent sand filters must be an engineered system (stamped by a registered civil engineer) in conformance with the guidelines established by Alpine County and this LAMP.

Local Agency: means any subdivision of state government that has responsibility for permitting the installation of and regulating OWTS within its jurisdictional boundaries, typically a county, city, or special district.

Mottling: 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. This soil condition can be indicative of historic seasonal high groundwater level, but the lack of this condition may not demonstrate the absence of groundwater.

Mound System: means an aboveground dispersal system (covered sand bed with effluent leach field elevated above original ground surface inside) used to enhance soil treatment, dispersal, and absorption of effluent discharged from an OWTS treatment unit such as a septic tank. Mound systems have a subsurface discharge.

New OWTS: means an OWTS permitted after the effective date of the OWTS Policy.

National Sanitation Foundation (NSF): an international, not for profit, nongovernmental organization that develops health and safety standards and performs product certification.

Oil/Grease Interceptor: means a passive interceptor that has a rate of flow exceeding 50 gallons-per-minute (gpm) and that is located outside a building. Oil/grease interceptors are used for separating and collecting oil and grease from wastewater.

Onsite Wastewater Treatment System (OWTS): means individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal. The short form of the term may be singular or plural. OWTS do not include "gray water" systems pursuant to Health and Safety Code §17922.12.

OWTS Policy: means the State Water Board's Policy for Siting, Design, Operation and Management of OWTS.

Percolation Test: a method of evaluating water absorption of the soil. The test is conducted with clean water and test results can be used to establish the dispersal system design. See Appendix I for guidelines on conducting Percolation Tests.

Permit: a document issued by a local or State agency that allows the installation, construction, repair, modification, or operation of an OWTS, or outlines waste discharge requirements, or a waiver of waste discharge requirements that authorizes discharges from an OWTS.

Person: means any individual, firm, association, organization, partnership, business trust, corporation, company, State agency or department, or unit of local government who is, or that is, subject to this LAMP.

Pit-Privy: (a.k.a. outhouse, pit-toilet) means self-contained waterless toilet used for disposal of non-water carried human waste; consists of a shelter built above a pit in the ground into which human waste falls.

Pressure Distribution: a method of wastewater dispersal using a pump or automatic dosing siphon and distribution piping used to achieve equal distribution of wastewater within a treatment unit, such as a sand filter, or a dispersal field.

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, §116275 (h) of the California Health and Safety Code.
Public Water Well: a ground water well serving a public water system.
Qualified Inspector: means a registered Environmental Health Specialist, registered California Civil Engineer, Qualified Installer/Contractor, or an individual that meets the requirements of the OWTS Policy. Additionally, a septic-pumping company registered with Alpine County (as defined in Chapter 9) shall be permitted to inspect OWTS, when servicing the system.
Qualified Installer: means a Licensed General Engineering Contractor (Class A), General Building Contractor (Class B), Sanitation System Contractor (Specialty Class C42), or Plumbing Contractor (Specialty Class C-36), and shall install all new OWTS and replacement OWTS in accordance with California Business and Professions Code Sections 7056, 7057, and 7058 and Article 3, Division 8, Title 16 of the California Code of Regulations (Plumbing Code). Additionally, if permitted by EHD a property owner may install their own OWTS as an owner/builder.
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. EHD reserves the right to determine if any person is qualified for a specific task.
Regional Water Quality Control Board (Regional Water Board): means one of the nine regional water quality control boards designated by Water Code §13200, which have authority for adopting, implementing, and enforcing water quality control plans (basin plans) which set forth the State's water quality standards and the objectives or criteria necessary to protect the beneficial uses of the waters of the state. The Lahontan and Central Valley Water Boards have jurisdiction over Alpine County.
Repair: is any action that modifies/replaces the existing dispersal system, replaces an existing septic tank, or modifies/replaces a major component of the onsite wastewater treatment system. Repairs require the issuance of a permit by the Department of Environmental Health.
Sand: means a soil particle; this term also refers to a type of soil texture. As a soil particle, sand consists of individual rock or mineral particles in soils having diameters ranging from 0.05 to 2.0 millimeters. 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.
Sanitary Sewer: a system for collecting residential or municipal wastewater and directing the collected wastewater to a treatment works prior to dispersal.
Septage: means materials accumulated in septic tanks, cesspools, vault privies, portable toilets, holding tanks, or any other sewage holding apparatus that receives bodily waste or

wastewater from plumbing fixtures. Septage does not include sewage sludge from municipal or community sewage treatment plants.

Septic Tank: a watertight, covered receptacle designed for primary treatment of wastewater and constructed to receive wastewater discharged from a building sewer, separate solids from the liquid, digest organic matter and store undigested solids, and allow the clarified liquids to discharge for further treatment with final subsurface discharge.

Silt: means a soil particle; this term also refers to a type of soil texture. As a soil particle, silt consists of individual rock or mineral particles in soils having diameters ranging from between 0.05 and 0.002 mm. As a soil texture, silt is soil that is comprised as approximately 80 percent or more silt particles and not more than 12 percent clay particles using the USDA soil classification system.

Site: the land occupied by the OWTS including any designated reserve areas.

Site Evaluation: an assessment of the characteristics of the site sufficient to determine its suitability for an OWTS to meet the requirements of this LAMP.

Soil: the naturally occurring body of porous mineral and organic materials on 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.

Supplemental Treatment: means any OWTS or component of an OWTS, except a septic tank or dosing tank, that performs additional wastewater treatment so that the effluent meets a predetermined performance requirement prior to discharge of the effluent into the dispersal field.

Total Maximum Daily Load (TMDL): 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, TMDLs are usually adopted as Basin Plan amendments and contain implementation plans detailing how water quality standards will be attained.

Waste Discharge Requirements (**WDR):** an operation and discharge permit issued for the discharge of waste pursuant to §13260 of the California Water Code.

Chapter 3: Alpine County OWTS Background (OWTS Policy 9.1 and 9.2)

Groundwater

Groundwater supplies a majority of Alpine County's residential, commercial, industrial, and agricultural water. Most groundwater is located within fracture zones of the bedrock, with a few small basins associated with valley and meadow alluvium. Ground waters are subject to the water quality objectives as specified in the Basin Plan. The Indian Creek Watershed and West Fork Carson River Hydrologic Unit, subsets of the Carson Valley Groundwater Basin and Alpine County, have been assigned a specific groundwater objective that the taste and odor shall not be altered.

Regulatory Framework

Since about 1970, onsite sewage disposal systems in Alpine County have been regulated by EHD. Alpine County regulations for onsite sewage disposal systems are contained in Chapter 13 of the Alpine County Code and the Memorandum of Understanding between Alpine County and the Regional Water Boards. Those regulations set forth specific requirements related to (a) permitting and inspection of onsite systems; (b) septic tank design and construction; (c) disposal field requirements; and (d) enforcement.

Land developments and subdivisions consisting of less than one hundred lots may be processed entirely by the health officer. The County, at its discretion, may require the formation of a public entity to maintain septic systems in residential developments of one hundred (100) lots or more.

County Records

EHD will retain permanent records of all OWTS and will make those records available within 10 working days upon written request for review by a Regional Water Board. The records for each permit shall reference the Tier under which the permit was issued.

Chapter 4: Data Collection, Reporting, and Notifications (OWTS Policy 3.3, 9.3.1, 9.3.3)

Reporting to Lahontan Water Board

On an annual basis, EHD will collect data and report, in tabular spreadsheet format, the following information. A copy of the report will be provided to both the Lahontan and Central Valley Regional Water Boards by February 1st each year.

- The number and location of complaints pertaining to OWTS operation and maintenance, and identification of those which were investigated and how they were resolved;
- The applications and registrations issued as part of the local septic tank cleaning registration program pursuant to §117400 et seq. of the California Health and Safety Code and Chapter 9 of this LAMP;
- The number, location, and description of permits issued for new and replacement OWTS,
  - Include parcel size, in square-feet, and
  - Design sewage flow rate, in gallons-per-day,
- The number, location and description of permits issued for OWTS where a variance from the approved LAMP was granted, and
  - Include parcel size, in square-feet, and
  - Design sewage flow rate, in gallons-per-day,
- The number of existing OWTS known and regulated by the County.

The annual report will include a summary with recommendations of any further actions warranted to protect water quality or public health.

Water Quality Assessment Program (Water Quality Monitoring) (OWTS Policy 9.3.2 & 9.3.3)

EHD must maintain a water quality assessment program to determine the general operation status of OWTS, evaluate the impact of OWTS discharges, and assess the extent to which groundwater and local surface water quality may be adversely impacted. The assessment program will include monitoring and analysis of water quality data, review of complaints, failures and OWTS inspections. This program will primarily focus on areas where shallow soils, fractured bedrock, shallow depth to the groundwater table, high-density of OWTS, and public/domestic water wells exist. The water quality data can be obtained from the following sources:

- Random well samples,
- Well samples taken following construction of a new well,
- Water samples taken by small public water systems,
- Groundwater data collected as part of the Groundwater Ambient Monitoring and Assessment Program and available in the Geotracker Database,

- Any other sampling data deemed relevant or necessary for the protection of groundwater and surface water supplies.

In addition to any data provided above, for existing communities that have septic tank density that is greater than one OWTS per acre for a given development, the County will provide the number of parcels in the community, the number of undeveloped parcels, and the number of parcels developed in the last five years.

A summary of the data shall be submitted on an annual basis on or before February 1st. An evaluation of the monitoring program and an assessment of whether water quality is being impacted by OWTS shall be submitted every 5 years with the annual report, beginning 2023.

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Notifications to Owners of Water Systems and State Water Board (OWTS Policy 7.6)

Existing or proposed OWTS in close proximity to public water wells and/or surface water drinking water supplies may have some potential to impact water quality. The owner of the drinking water system will be notified, prior to issuance of any discharge permit, under the following conditions:

1. Prior to issuance of a permit to install a new or replacement OWTS that is within a horizontal sanitary setback to the public well; or within 1,200 feet of an intake point for a surface water treatment plant for drinking water, in the drainage catchment in which the intake point is located, or located such that it may impact water quality at the intake point. Notification will be done electronically or in writing by EHD with a copy of the permit application that includes:
    a. A topographical plot plan for the parcel showing the OWTS components, property boundaries, proposed structures, physical address, and name of property owner,
    b. The estimated wastewater flows, effluent composition, intended use of proposed structure generating the wastewater, soil data, and estimated depth to seasonally saturated soils, and
    c. Advise the public water system owner or Division of Drinking Water shall have 15 days from receipt of the permit application to provide recommendations and comments to EHD.
2. Within 72 hours of discovering a failing OWTS that is within 150 feet of a public water well, 200 feet of the high water mark of a surface water drinking water supply where the dispersal system is within 1,200 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact water quality at the intake point, or 400 feet of the high water mark of a surface water drinking water supply where the dispersal system is between 1,200 and 2,500 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact water quality at the intake point. Notification will be done electronically or in writing and will include proposed corrective action that will be taken to mitigate the failure.

Chapter 5: Not Allowed or Authorized in LAMP (OWTS Policy 9.4)

The following conditions are not allowed or authorized in this LAMP:

1. Cesspools of any kind or size.
2. OWTS receiving a projected flow over 10,000 gpd.
3. OWTS receiving a projected flow over 3,500 gpd must either utilize a supplemental treatment system certified by the NSF or a third party tester as capable of achieving 50-percent total nitrogen reduction when comparing the 30-day average influent to the 30-day average effluent; or submit an evaluation to the EHD completed by a Qualified Professional that determines whether or not the discharge from the OWTS will adversely affect groundwater quality.
4. OWTS that discharge effluent on or above the ground surface such as sprinklers, exposed drip lines, free-surface wetlands, or a pond.
5. Slopes greater than 30-percent.
6. OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections.
7. OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks, or RV holding tanks that accept waste combined with preservatives (i.e., formaldehyde).
8. Separation from the bottom of dispersal system to seasonally high groundwater of less than 2 feet for alternative/supplemental treatment systems, nor less than 5-feet separation for conventional systems,
9. Installation of new or replacement OWTS where a public sewer is available. Public sewer availability is defined as follows:
    a. The property on which the structure is located within 200-feet of a public sewer main,
    b. The property is within the boundaries of the sewer district or annexation has been approved by the sewer district, and a waiver of the connection to sewer can be considered where the sewer is located more than 200-feet from the building or plumbing stub out, the connection fees and construction costs are greater than twice the total cost of the OWTS and the proposed OWTS can be installed in a manner that will meet the minimum requirements of this LAMP.
10. Except as provided for in Item 12 and 13, new or replacement OWTS with minimum horizontal setbacks less than any of the following:
    a. 150 feet from a public water well where the depth of the effluent dispersal system does not exceed 10 feet in depth,
    b. 200 feet from a public water well where the depth of the effluent dispersal system exceeds 10 feet in depth,
    c. Where the effluent dispersal system is within 600 feet of a public water well and exceeds 20 feet in depth, the horizontal setback required to achieve a two-year

travel time for microbiological contaminants shall be evaluated by a qualified professional; in no case shall the setback be less than 200 feet,

d. Where the effluent dispersal system is within 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 400 feet from the high water mark of the reservoir, lake or flowing water body, or
e. Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 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 200 feet from the high water mark of the reservoir, lake or flowing water body.

11. For replacement OWTS that do not meet the horizontal separation requirements in Item 11 above, the replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such case, the replacement OWTS shall utilize supplement treatment and other measures, unless EHD 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.
12. For new OWTS, installed on parcels of record existing before May 13, 2013 which is the effective date of the OWTS Policy, that cannot meet the horizontal separation requirements in Item 11 above, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize supplemental treatment for pathogens as specified in §§10.9 and 10.10 of the OWTS Policy and any other mitigation measures prescribed by EHD.

Chapter 6: Requirements for Existing OWTS (Tier 0)

Existing Functioning Onsite Wastewater Treatment Systems (OWTS Policy 6.0 – 6.3)

Consistent with the criteria outlined in Tier 0 of the OWTS Policy, existing systems that are functioning properly will not be affected by this LAMP. Regular inspection and maintenance are necessary to ensure that an OWTS continues to operate satisfactorily and to extend the life of the system. OWTS that fail will be repaired consistent with the criteria outlined in Tier 4 of the OWTS Policy and Chapter 11 of this LAMP.

Existing functioning OWTS are eligible for coverage under Tier 0 of this LAMP if they meet the following requirements:

- Projected flow of 10,000 gpd or less,
- Receive only domestic wastewater from residential or commercial buildings, or high-strength wastewater from commercial food service buildings that does not exceed 900 mg/L BOD and has a properly sized and functioning oil/grease interceptor,
- Continue to comply with any previously imposed permitting conditions (i.e., Alpine County Code),
- Do not have prohibited conditions as outlined in Chapter 5,
- Do not require supplemental treatment under Tier 3,
- Do not require corrective action under Tier 4, and
- Do not consist of a cesspool as a means of wastewater disposal.

The Regional Water Boards and/or Alpine County will deny OWTS coverage under Tier 0 if the OWTS is not in compliance with the aforesaid requirements. Additionally, the OWTS may be denied coverage if the OWTS is unable to adequately protect water quality of the waters of the State, as determined by the Regional Water Boards. Existing OWTS currently under waste discharge requirements or individual waiver of waste discharge requirements will remain under those orders until notified in writing by the Regional Water Boards that they are covered under this LAMP.

OWTS Maintenance, Repairs, and Modification

Whenever an OWTS is serviced (e.g. septic tank pumping, leach line endoscopy), a Qualified Inspector shall examine the tank to look for signs of deterioration, corrosion or evidence that the dispersal field has failed or is in the process of failing. A Qualified Inspector submits a written report that includes the property owner's name, address and parcel number, a description of the system and any deficiencies noted during the inspection within 30-days of the inspection. If the inspection was performed by an Alpine County registered septic-pumping company (Chapter 9) the report of the service/inspection may be submitted to EHD with the quarterly report, or within 30-days of the inspection.. However, in any case where the inspection has found that the system has failed or has reasonable potential to fail, the report must be submitted within 24-hours. For systems that are deemed failing or display reasonable potential to fail, the requirements outlined in Tier 4 of this LAMP will be enforced.

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The responsibility of the satisfactory operation of the OWTS rests solely with the property owner. In the event of a sewage system failure the property owner must notify Alpine County and is solely responsible for the cleanup and repair of the system.

Existing OWTS will be reviewed by EHD when homes are remodeled or expanded that increases the sewage flow or changes the characteristics of the sewage generated. When a building remodel will increase the flow, the OWTS should be upgraded so that the anticipated new flow can be received and treated adequately, in compliance with the requirements specified in this LAMP. Examples of changes that would increase the flow of sewage include the addition of an accessory dwelling unit, bedroom, fixtures, or increased population. Additionally, improvements on a property that could potentially intrude upon the physical location of the OWTS and the expansion or alternate areas for the dispersal system would trigger the need for review.

Accessory Dwelling Units (ADU) proposed to be added to existing developments utilizing OWTS will be reviewed for approval by EHD. To add an ADU to an existing, installed OWTS, the system must be verified by a Qualified Professional to be adequately designed and sized, and met all the applicable requirements provided here in this LAMP, including the minimum lot size requirements. If a new OWTS is proposed in addition with an ADU or to accommodate an ADU, the system will be treated as a new development and must meet all the requirements provided herein, including protection of groundwater.

Chapter 7: Onsite Wastewater Treatment System Permitting Process and Siting (OWTS Policy 7.0 and 9.1)

System Design Considerations:

The size and type of OWTS needed for a particular development will be a function of the following factors:

Soil Permeability:	Permeability determines the degree to which soil can accept sewage discharge over a period of time. Permeability is measured by percolation rate, measured in minutes per inch (MPI).
Unsaturated Soil Interval:	The distance between the bottom of the OWTS dispersal system and the highest anticipated groundwater level or the shallowest impervious subsurface layer at a site.
Peak Daily Flow:	The anticipated peak sewage flow, typically represented in gpd. In many cases the number of bedrooms and/or persons for a proposed home is used to determine peak daily flow.
Net Usable Land Area:	The area available that meets all setback requirements to structures, easements, watercourses, or other geologic limiting factors for the design of an OWTS.

The Permit Process

A completed permit application, including a scaled plot-plan, must be submitted to EHD for any construction that requires the installation of a new, or the replacement of an existing OWTS. Only after the EHD has approved a permit application can the County's Building Department issue any permits.

1. Percolation Tests

Percolation testing shall be performed by a registered California Civil Engineer, registered Engineering Geologist, registered Environmental Health Specialist, an American Registry of Certified Professionals in Agronomy Crops and Soils (ARCPACS) Certified Professional Soil Scientist with experience in onsite wastewater disposal, or a qualified individual as determined by EHD. In some cases, new percolation tests may be waived if prior testing was performed or existing data indicates adjacent lots have consistent and adequate soil to support the installation of an OWTS. EHD may request additional percolation tests to verify adequacy of soils. See Appendix I for percolation test procedures.

2. Soil Profiles

The purpose of the test trenches is to determine site-specific soil characteristics, including effective soil depth below the bottom of the leach lines and suitability of the soils to receive wastewater. Alpine County requires a minimum of two test trenches to a depth of 10 feet.

Additional test trenches may be required on a site-specific basis. At a minimum, soil profiles shall provide the following information:

- Observed groundwater depth,
- Field texture analyses with approximate percentage of gravel, sand, silt, and clay,
- Soil mottles,
- Depth to bedrock or impervious layer,
- Roots,
- Visual observations of the soil lithology and the stratified layers, especially those layers exemplifying low-permeability.

If groundwater is observed in the soil profiles or groundwater could rise to an elevation which would not meet the minimum separation requirements during the course of a normal rainfall season, additional wet weather testing may be required. Wet weather testing shall be conducted during the course of an average or above average annual rainfall year and during the months of the highest anticipated groundwater (April, May, June). The Qualified Professional conducting the groundwater study must support their express conclusion that the anticipated high groundwater elevation will not encroach upon the minimum separation required to the bottom of the proposed OWTS. The supporting data shall include, but not be limited to, data on the site's topography, soils, geology, basin studies, hydro-geologic studies, and groundwater-monitoring data from the on-site observation wells through an above normal rainfall year.

3. Permit Application and Approval

The permit application shall include:

- A completed permit application form,
- Three (3) copies of a site plan illustrating the proposed sewage disposal system,
- Soils report, including percolation test results and soil profiles,
- OWTS system design with proposed design flow calculations, and
- The appropriate permit fees.

Once the application has been deemed complete, EHD will conduct a site evaluation to verify adequate soil conditions exist, setbacks requirements are met, and to determine if any other conditions exist that may adversely impact ground or surface water quality. The property corners shall be located prior to the on-site lot evaluation.

A permit will be issued upon determination that the OWTS components are designed in accordance with this LAMP. Permits are valid for one year and may be extended up to one year upon receiving a request from the owner.

Once the permit is issued, the OWTS can be installed by a Qualified Installer, or a property owner may install their own OWTS as an owner/builder. Applicable site-specific conditions for each system will be attached to the permit.

4. Changes in Design or Location

For any proposed changes in design or location of any of the OWTS components, approval must be obtained from EHD prior to commencing any construction of the OWTS.

5. Setbacks

The OWTS installation shall comply with the following setback requirements outlined in Table 7-1, below.

Table 7-1: Setback Requirements for OWTS Systems

Minimum Horizontal Distance (in feet) Required From:	Building Sewer	Septic Tank	Leach Trench/Bed
Building/Structure[2]	2	5	8
Property Line[3]			
With Wells	25	50	50
Without Wells	25	5	5
Private Wells[4]	50	100[1]	100[1]
Public Wells[4]	100	150[1]	150[1]
Lake, Reservoir or Wetlands (measured from the high-water line)[4]	50	200	200
Perennial Stream	50	100	100
Water Line	1	5	5
Pressure Public Water Main	10	25	25
Unstable Land Mass or Earth Slides	100	100	100
Ephemeral Streams	25	50	50
Cut Bank	10	25	5 x height of bank
Distribution Box	-	5	5
Large Trees	-	5	5
Public Utility Trenches		10	10

1. For any system discharging 5,000 gpd or more, the distance shall be increased to 200 feet.
2. Distance requirements shall include porches and steps whether covered or uncovered, breezeways, roofed porte-cocheres, roofed patios, car port, covered walks, covered driveways and similar structures or appurtenances.
3. For parcels created prior to April 1, 1973, the preceding minimum horizontal distance required from the property line to the septic tank or leach trench may not apply. For these parcels, the setback distances from the property line to the septic tank or disposal field is 5 feet. For old parcels with insufficient area to meet all the above setbacks the EHD may provide additional guidelines for setback requirements. Additionally, where special hazards are involved, the distance required may be increased as directed by EHD.
4. In addition to these setbacks listed herein, there are additional setback requirements in Chapter 5, item 11 for disposal fields with respect to drinking water wells and surface water intakes that must be met.

6. OWTS in close proximity to surface water treatment plants.

Prior to issuing permit, EHD shall determine if the OWTS is within 1,200 feet of an intake point for a surface water treatment plant for drinking water, or is in the drainage catchment in which the intake point is located, and located such that it may impact water quality at the intake point such as being upstream of the intake point for a flowing water body. If the OWTS is within 1,200 feet of an intake point for a surface water treatment plant for drinking water, is in the drainage catchment in which the intake point is located, and is located such that it may impact water quality at the intake point, the following requirements will apply:

- EHD shall provide a copy of the permit application to the owner of the water system of the Applicant's proposal to install an OWTS within 1,200 feet of an intake point for a surface water treatment. If the owner of the water system cannot be identified, then the EHD will notify State Water Board's Division of Drinking Water.
- In addition to supplying a plot plan with the aforesaid requirements, the permit application shall provide the estimated wastewater flows, intended use of proposed structure generating the wastewater, soil data, and estimated depth to seasonally saturated soils.
- The public water system owner shall have 15 days from receipt of the permit application to provide recommendations and comments to the EHD. Approval or denial of the OWTS will be based on the risk of the OWTS to water quality.

7. Lot Size Requirements

For new subdivisions, or new developments within Alpine County, minimum lot size requirements shall be predicated on development density and proposed discharge flow. Equivalent Dwelling Units (EDU) are used as a metric to size waste disposal developments and is defined as 250 gpd per EDU. Developments for single-family dwelling units OWTS are not to exceed two EDUs per acre, or 500 gpd/acre. OWTS serving single-family dwelling units are based on proposed design discharge, but shall always met/exceed the minimum lot size requirements below:

- The minimum lot size for new lots with an OWTS and private, individual wells onsite is one acre.
- The minimum lot size for new lots with an OWTS and served by a public water supply is ½ acre.

For existing subdivisions, the following minimum lot size requirements shall apply:

- The minimum lot size for the use of a new OWTS within an existing subdivision shall have a net area greater than 15,000 SF.
- Lots of less than 15,000 SF in size and are served by OWTS require special consideration because of their small size and may not be developable. Alternative/supplemental treatment, limits in discharge, and additional monitoring may be required for these systems.

OWTS serving multiple-dwelling units shall also utilize minimum lot size requirements based on development density and proposed discharge flow. Developments for multiple-dwelling units OWTS shall not exceed two EDUs per acre, or 500 gpd/acre. The minimum lot size for multiple-dwelling units shall be 1 acre.

8. Groundwater Separation Requirements for Onsite Wastewater Treatment Systems

Table 7-2: Minimum Depths to Groundwater/Minimum Soil Depth from the Bottom of Leach Line Dispersal System

Percolation Rate	Minimum Depth
Less than 1 MPI	Conventional OWTS Not Authorized
1 MPI but less than 5 MPI	Twenty (20) feet
5 MPI but less than 60 MPI	Five (5) feet
Greater than 60 MPI	Conventional OWTS Not Authorized.

OWTS with alternative or supplemental treatment will be required to maintain a minimum of two-feet of separation between the bottom of the dispersal system and the highest anticipated level of groundwater. OWTS will not be permitted in soils with a percolation rate greater than 120 MPI, whether conventional or supplemental/alternative. The minimum vertical separation for seepage pits shall not be less than 10-feet.

9. Operating Permits

Operating permits will be required for Alternative or supplemental OWTS to ensure they are functioning properly and as designed. Permit conditions will require an annual inspection of the OWTS by a Qualified Inspector or a trained manufacturer's representative. A report detailing the findings of the inspection shall be submitted to EHD within 30-days of the date of the inspection. In cases where an OWTS has been determined to be failing, the qualified inspector must submit a report to the EHD within 24-hours.

Commented [MT5]: Not yet defined.

10. Special Conditions

Certain conditions such as building in a flood plain, high ground water, less permeable soils (percolation rates greater than 60 MPI), limited parcel size, or excessive rock may necessitate that the septic system be designed by a Registered Civil Engineer. Use of an engineer does not guarantee EHD acceptance or approval of any engineered sewage disposal design submitted. Some existing properties may be unsuitable for the use of individual onsite sewage disposal systems for a variety of reasons.

Chapter 8: Minimum OWTS Design and Construction Standards (Tier 2)

Septic Tanks

The following will provide the minimum design specifications and requirements for septic tanks:

1. Septic tanks must be certified by the IAPMO or stamped by a California registered civil engineer as meeting the industry standards.
2. The minimum septic tank size shall be 1,000 gallons.
3. The tank shall be watertight and possess two chambers.
4. Septic tanks shall be installed per the manufacturer's instructions.
5. The bottom of the excavation for the tank shall be level and extend into native or compacted soils to eliminate potential settling issues.
6. Access openings shall have watertight risers, the tops of which shall be set at most 6 inches below finished grade.
7. Effluent filters must be IAPMO approved.
8. Septic tanks installed in areas of vehicular traffic must be traffic-rated.
9. Minimum slope of the building sewer effluent main to the septic tank shall be ¼ inch per foot (2%). A clean out shall be installed within 2 to 5 feet of the house. Additional clean outs of the sewer line feeding the septic tank shall be required at 100-foot intervals.
10. Septic tanks shall be sized as follows:

Table 8-1: Capacity of Septic Tanks

Single Family Dwelling; No. of Bedrooms[1]	Multiple Dwelling Units or Apartments, One Bedroom Each [units][1]	Other Uses; Maximum Fixture Units Served[1]	Minimum Septic Tank Capacity [gallons]
1, 2 or 3	-	20	1,000
4	2	25	1,200
5 or 6	3	30	1,500
	4	45	2,000
	5	55	2,250
	6	60	2,500
	7	70	2,750
	8	80	3,000
	9	90	3,250
	10	100	3,500
Extra Bedrooms over 6			Additional 150 gallons per bedroom
Extra Dwelling Units over 10			Additional 250 gallons per bedroom/unit
Extra Fixture Units over 100			Additional 25 gallons per fixture unit

[1]The design peak daily flow shall not exceed the volume of the septic tank.

Disposal Fields

Leach lines systems are the primary means of effluent dispersal for OWTS. Disposal fields shall be constructed based on the calculated area needed to treat sewage produced from the proposed or existing residence or structure. Septic systems shall not be installed on filled ground unless the fill is designed, evaluated, and approved by a Licensed California Civil Engineer.

1. All piping and materials used in leach line systems, including gravel-less/chamber systems, must have IAPMO approval.
2. Leach line trenches shall be constructed to a minimum width of 18-inches and a maximum of 36-inches.
3. Leach lines shall be installed level with a maximum allowable fall of 2-inches per 100-feet.
4. Leach lines shall be spaced at least 10-feet apart, measured center to center.
5. The perforated pipe shall be covered with a minimum of 2-inches of leach rock. Leach rock shall be graded at ¾ to 2½-inches in size and shall be covered with straw, untreated building paper or a geotextile fabric prior to backfill. The ends of leach pipes shall be capped. A minimum of 12-inches (18-inches is preferred) of earth shall then be applied. The maximum soil cover allowed over the top of the infiltrative surface is 48-inches.
6. The depth of the trench will vary depending on design. The depth of rock beneath the perforated pipe will vary between 1-foot minimum and 3-feet maximum. The infiltrative area [square-feet per linear-foot] quantified in Tables 8-2 below, shall be calculated by multiplying the cross-sectional linear footage by the linear length of the leach lines. The cross-sectional linear footage is calculated by adding the trench depth (one foot below the leach pipe to the bottom of the trench) multiplied by two (to account for both sides), plus the width of the trench bottom. Utilizing the maximum trench dimensions for leach lines specified herein, the maximum infiltrative area is 7-square-feet per linear-foot. This results in an effective depth of not more than 2-feet for each sidewall, and caps the trench depth at 3-feet below the disposal line.
7. Square-footage of required leach lines utilizing chambers are calculated using a multiplier of 70-percent of required square footage, as determined in step #6 above. For gravel-less chamber system infiltrative areas, no sidewall credit is given, only bottom width credit.
8. Non-residential leach line systems shall be calculated by a Qualified Professional using expected peak daily wastewater flows and safety/surge a factor of 2 of the calculated application area as determined in step #6 above, unless a reduction is allowed by EHD.
9. Maximum length of any leach line shall be 100-feet and multiple leach lines in a system shall be of equal length.
10. A 100-percent replacement area is required for all leach lines systems.

Distribution Boxes

Where two or more drain lines are installed, an approved distribution box shall be installed at the head of each disposal field. Distribution boxes shall be designed to ensure equal flow distribution and shall be installed level. There shall be a five-foot separation between he distribution box and each leach trench.

Leach Lines on Steep Slopes

The following design parameters are applicable to slopes exceeding 25-percent but less than 30-percent.

1. The maximum slope allowed is 30-percent.
2. Leach lines installed on slopes exceeding 25-percent shall be installed in 5-foot-deep trenches with 12-inches of leach rock below the leach pipe or with approved chambers or other gravel-less system.
3. Soil testing must provide data representative of the entire disposal area.
4. Design reports must include:
    a. Leach line depth, slope, location, and composition,
    b. Cross sections of hillside soil profiles, or detailed boring logs of all test holes and borings,
    c. A topography map,
    d. A scaled plot plan.
    e. A slope stability report or statement from a Qualified Professional.

TABLE 8-2: Application Rates as a Function of Disposal Rate [ft^2/gpd]

Percolation Rate [minutes per inch]	Application Rate [gpd per ft^2]	Leach Line Disposal Area (Infiltrative Area) Required [ft^2] (Use 0.70 multiplier of the values listed below for chamber systems)			
		300 gpd (2 bedroom)	400 gpd (3 bedroom)	500 gpd (4 bedroom)	600 gpd (5 bedroom)
<1	1.2	Alternative/Supplemental Treatment Systems Only			
1-5*	1.2	250	333	417	500
10	0.8	375	500	625	750
15	0.73	411	548	685	822
20	0.66	454	606	758	909
25	0.59	508	678	847	1017
30	0.53	566	755	943	1132
35	0.48	625	833	1042	1250
40	0.42	714	952	1190	1429
45	0.37	811	1081	1351	1622
50	0.31	968	1290	1613	1935
55	0.26	1154	1538	1923	2308
60	0.2	1500	2000	2500	3000
65	0.18	Alternative/Supplemental Treatment Systems Only			
70	0.17				
75	0.15				
80	0.13				
85	0.12				
90-120	0.1				

* 20 feet to groundwater or Alternative/Supplemental Systems required.

Leach Beds

1. Leach beds may be only used when lot size and/or setbacks prohibit installation of standard leach lines. Leach bed construction is similar to standard leach lines except for sizing and spacing of lateral piping.
2. Leach beds will be sized with 1.5 times the absorption area as for leach lines calculating bottom area only, no infiltrative area credit is given for the sidewalls of then leach bed.
3. Distribution piping will be spaced no more than 4-feet apart and will be looped (interconnected) at the far end.
4. Leach beds must maintain a minimum of 10-feet of vertical separation between the bottom of the dispersal system and the highest groundwater level.

Low Pressure Distribution Systems (Pressure Dosed System)

When site conditions preclude the use of wastewater dispersal by gravity flow, effluent may be distributed to a dispersal field under pressured systems.

1. The pump chamber or tank shall meet industry accepted standards; have a capacity equal to six hours of peak flow or 375 gallons, whichever is greater.
2. Be equipped with an audible and visible high-water alarm.
3. There must be at least 6-inches of soil cover over the distribution system.
4. Pressure dosed systems must be designed and stamped by a California registered civil engineer.

Alternative and Supplemental Treatment Systems

Alternative Wastewater Treatment Systems are OWTS utilizing dispersal fields consisting of components other than a conventional system, designed to address unfavorable site conditions such as high groundwater, impervious soil formations, slow percolation rates, and disposal field size limitations. Examples include mound systems, at-grade, sand filters, and evapotranspiration systems. Supplemental Treatment Wastewater Treatment Systems (STS) are OWTS that perform additional wastewater treatment so that the effluent meets a predetermined performance requirement prior to discharge of effluent into the dispersal field. They may be designed to address conditions in 303 (d) list "Impaired Water Bodies" designated areas (see Tier 3). All STS must be tested and certified by an independent testing organization, such as NSF. Part of the testing must include an evaluation of the system's effectiveness in reducing Total Suspended Solids (TSS), BOD and Total Nitrogen (TN).

1. Alternative and supplemental systems must be designed by a registered California civil engineer or qualified professional in conformance with manufacturer's and State guidelines.
2. Treated effluent from all STS shall be discharged to a subsurface dispersal system consisting of leach lines, leach beds or pressurized dispersal systems.
3. Sizing for dispersal systems that utilize leach lines or leach beds shall be the same as those used for conventional OWTS, defined in Table 8-2 above.

4. A minimum 2-foot separation of permeable soil must exist between the bottom of the dispersal system to the highest anticipated level of groundwater.
5. The STS shall be equipped with visual and audible alarms.
6. The system designer shall provide the property owner with a design, operation, monitoring, and maintenance manual fully describing all components of the system and the proper and necessary operations, monitoring, and maintenance of all components.
7. To ensure that the system continues to function properly, the system shall be inspected at least once annually by a Qualified Inspector. Inspection reports shall be submitted to EHD detailing the findings of the inspection within thirty days. The inspection report shall indicate if the system is functioning and meeting effluent requirements as designed. If the system is determined to be failing the report must be submitted within 24-hours. This agreement is to remain in effect for the life of the Alternative or Supplemental Treatment system.

Special Permitting for Alternative and Supplemental Treatment Systems

Additional permitting requirements for alternative and supplemental treatment systems shall include:

1. A report by a registered California civil engineer that describes the proposed on-site sewage disposal system and the relevant physical conditions of the site, including all calculations.
2. A written certification by the registered California civil engineer stating the on-site sewage disposal system has been installed, inspected and approved in accordance with the approved engineered plans.
3. Prior to final approval, the property owner shall record at the Alpine County Clerk-Recorder's office, a notice stating that an alternative or supplemental treatment system has been installed on the property. This "Notice to Property Owner" shall run with the land and will serve as constructive notice to any and all future property owners that the property is served by an alternative or supplemental treatment wastewater treatment system and is therefore subject to a contract for regular maintenance, monitoring and reporting requirements. A copy of the recorded document shall be provided to EHD.

Supplemental Treatment Systems and Required Treatment Standards

The OWTS Policy prescribes the following treatment standards:

1. OWTS receiving a projected flow over 3,500 gallons per day must either utilize a supplemental treatment system certified by the NSF or a third-party tester as capable of achieving 50-percent total nitrogen reduction when comparing the 30-day average effluent to the 30-day average influent; or submit an evaluation to the EHD completed by a qualified professional that determines whether or not the discharge from the OWTS will adversely affect groundwater quality.
2. OWTS in situations where horizontal setbacks (excluding water supply setbacks) cannot be met, or there are inadequate soils for the allowance of conventional systems, and no

other impairing conditions such as high ground water, supplemental treatment components of STS, must be certified by the NSF to meet the minimum requirements of NSF 40, or must meet standards approved by EHD.

3. OWTS in situations where minimum density cannot be met, increased protection of shallow groundwater is required, or nutrient reductions may be necessary, the OWTS system must meet the requirements of an NSF 245 certified system.
4. OWTS that cannot meet setbacks required in Chapter 5, item 11, for proximity to public water systems will need to utilize supplemental treatment for pathogens and nitrogen, as required by §10.8 of the OWTS Policy.

Variances

An individual may apply for a variance from requirements of this LAMP, provided the request does not violate a Basin Plan prohibition. EHD may establish alternative OWTS siting and operational requirements on a case-by-case basis with proper supporting documentation and concurrence from the Regional Water Board. As defined in the OWTS Policy, a variance exists for those parcels of record before the State's implementation of the OWTS Policy in 2013 and unable to meet the horizontal setbacks for surface water intakes:

a. For new and replacement OWTS, installed on parcels of record existing at the time prior to January 1, 2013, that cannot meet the horizontal separation requirements for surface water intakes and public well as defined in Chapter 7 of this LAMP, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize supplemental treatment for pathogens as specified in §10.8 of the OWTS Policy. Supplemental treatment for pathogens requires components designed to perform disinfection shall provide sufficient pretreatment of the wastewater so that effluent from the supplement treatment components does not exceed a 30-day average TSS of 30 mg/L and shall further achieve an effluent fecal coliform bacteria concentration less than or equal to 200 Most Probable Number (MPN) per 100 milliliters (OWTS Policy §10.10.1). In addition, the level of groundwater below the bottom of the dispersal system shall not be less than 3 feet, and all dispersal systems shall have at least 12 inches of soil cover (OWTS Policy §10.10.2).

Chapter 9: Septic Pumping (OWTS Policy 9.2.6)

All septic tank sludge is required to be transported out of Alpine County to an approved sewage treatment facility. The volume of septage from the County is very limited and all septic pumper companies are from adjacent counties.

In accordance with the California Health and Safety Code §117400 – 117450, registration is required for the operation of a sewage pumping business. A septic pumping registration form must be completed and submitted to EHD. The registration may be revoked for violations of the California Health and Safety Code.

Pursuant to California Health and Safety Code §117420, all sewage pumping equipment must be inspected and approved by EHD prior to granting registration of a sewage pumping business. Pumpers are requested to make the necessary arrangements for the inspection of their vehicle and equipment.

The registrant shall submit quarterly reports of septage pumping to the EHD. At a minimum, the report shall indicate the following:

a. The name and address of the owner,
b. Gallons removed from the septic system,
c. Any septic tank components or disposal field that are failing or not operating as intended,
d. The treatment plant where the septage was disposed of and by whom.

In those cases where the service has found that the system has failed, or has reasonable potential to fail, the report must be submitted to EHD within 24 hours.

Chapter 10: Impaired Water Bodies (Tier 3)

Currently, there are no water bodies in Alpine County listed on Attachment 2 of the OWTS Policy as impaired pursuant to the federal Clean Water Act.

Advanced Protection Management Program

If a water body in Alpine County is subject to being listed on Attachment 2 because it has been listed as impaired under Section 303(d) of the Clean Water Act, the EHD will follow the specific requirements found in Tier 3 of the OWTS Policy, or develop an Advanced Protection Management Program (APMP) in accordance with the established TMDL and in close consultation with the Regional Water Board. The APMP shall provide the same level of protection as the Tier 3 standards in the OWTS Policy and will require appropriate supplemental treatment systems (STS) within those areas. Variances from the prohibitions specified in §9.4.1 through §9.4.9 of the OWTS Policy and Chapter 5 of this LAMP, are not allowed in areas covered by an APMP.

Chapter 11: Guidelines for Repairs and Abandonment of Systems (Tier 4) (OWTS Policy 11)

Failing OWTS

All OWTS have the potential to fail due to age, misuse or improper design and the failure may result in wastewater being discharged to the surface of the ground, or wastewater backing up into plumbing fixtures. These systems will require corrective action to mitigate any risk to public health or contamination of the environment.

Corrective Action Requirements:

1. EHD will respond to and conduct an investigation of all reports or complaints of failing OWTS and sewage surfacing on a particular property. EHD will notify the owner of a public water well or water intake and the State Water Board's Division of Drinking Water upon the discovery of a failing OWTS within the setbacks detailed in Chapter 4 of this LAMP (OWTS Policy §7.5.6 - 7.5.8).
2. Any OWTS that is found to be failing will be issued a Notice of Violation (NOV) to the property owner requiring action to eliminate any potential health hazard through pumping of the septic tank by a licensed sewage hauler and elimination of wastewater flows to the failing OWTS. The NOV will detail the repair time frames required by the OWTS owner.
3. The repair shall be evaluated by EHD to ensure it meets the minimum design criteria of the associated Tier as detailed in this LAMP and conforms to the requirements outlined in §11 of the OWTS Policy.
4. A permit will be required to repair the system and a follow-up inspection will be conducted to determine compliance.
5. Failure to complete the required corrective action within the time frames given in the NOV may result in additional enforcement action to eliminate any immediate health hazards.

Abandonment of OWTS

Unless properly abandoned, an OWTS that is no longer used may represent a safety or environmental hazard. Prior to abandoning an OWTS, the owner must submit an application and obtain a permit from EHD. OWTS shall be properly abandoned under the following conditions:

- Upon the discovery of a cesspool,
- When the structure is connected to the public sewer, or
- When the structure served by the OWTS is demolished, unless the owner demonstrates their intention to use the system again.

The abandonment standards for a septic tank and dispersal field include:

- The tank or pit must be pumped to remove all contents,

- A tank may be removed entirely, or
- If left in place, the top must be removed, the bottom punctured or cracked to allow for drainage and the shell filled with inert material such as clean soil, sand, or cement.
- Leach lines composed of gravel and pipe may be abandoned in place,
- Chamber systems shall be removed, and the trench backfilled, unless EHD approves of abandoning the system in place.

Appendix I: Percolation Test Procedure

This Appendix is to be used to establish clear direction and methodology for percolation testing in Alpine County. The objective is to determine the area necessary to properly treat and maintain sewage underground, to size the OWTS with adequate infiltration surface area based on an expected hydraulic conductivity of the soil and the rate of loading, and to provide for a system intended to allow for a long-term expectation of satisfactory performance.

All percolation testing for dispersal systems in Alpine County shall be conducted through the use of the following procedures. The test shall be performed by or under the direct supervision of a Qualified Professional or Certified Professional Soil Scientist, with experience in onsite sewage disposal. A copy of the percolation test results is to be submitted with the plot plan to the Environmental Health Department (EHD). Soil profiles are 10-foot deep backhoe excavations and are required to determine the depth and composition of the soil and the distance to ground water. Any deviation shall be authorized only after receiving written approval by EHD.

TEST HOLES

Number of Test Holes

1. A minimum of two test holes are required for each dispersal site proposed; testing must be completed for primary site and reserve site.
2. Additional test holes may be necessary on a site-specific basis for reasons that include, but are not limited to the following:
   a. Unacceptable or failed tests,
   b. Areas of the disposal field requiring defined limits for exclusion,
   c. Soil conditions are variable or inconsistent,
   d. Surface slope exceeds 25%,
   e. Use of an Alternative or Supplemental system, and
   f. EHD reserves the right to require additional test holes.

Depth of Testing

1. Test holes shall be representative of the dispersal system installation depth, typically 36 or 48 inches.
2. Conditions which may require testing deeper than leach line depth, including:
   a. Shallow consolidated rock or impervious soil layers, or
   b. Other factors as might be determined by sound geotechnical engineering practices.

Soil Classification

1. All test holes and excavations shall have soil types described according to the American Society for Testing and Materials (ASTM) or the USDA Soil Classification System (Unified).
2. All excavations are to be reported, including any, which encountered groundwater or refusal. Comments about consolidation and friable characteristics are encouraged.

Location of Percolation Test Holes

Test holes shall be representative of the dispersal area demonstrating site conditions throughout the entire sewage disposal system with equal consideration of primary and reserve leach fields.

Drilling of Borings for Test Holes

Diameter of each test hole shall be 6 inches, hand dug or bored. If a backhoe excavation is used, a test hole at 12–14 inches in depth shall be excavated into the bottom of the trench.

Preparation of Test Holes

The sides and bottom of the holes shall be scarified so as to remove the areas that became smeared by the auger or other tool used to develop the hole. All loose material should be removed from the hole. Two inches of fine gravel should be placed in the hole to prevent bottom scoring.

PRESOAKING THE TEST HOLES

Procedure

1. Carefully fill the test hole with 12-14 inches of clear water.
2. Maintain 12-14 inches of clear water for a minimum of 4 hours. After four hours, allow the water column to drop overnight. Testing must be done within 24-hours after the initial four-hour presoak.
3. Overnight Option: If clay soils are present, it is recommended to maintain the 12-14-inch water overnight. A siphon can be used to maintain the supply at a constant level.
4. In highly permeable sandy soils with no clay and/or silt, the presoak procedure may be modified. If, after filling the hole twice with 12-14 inches of clear water, the water seeps completely away in less than 30 minutes, proceed immediately to begin the test. If the test is done the following day, a presoak will be necessary for at least an hour in order to reestablish a wetted boundary.

Saturation and Swelling

1. Saturation means that the void spaces between soil particles are full of water. This can be accomplished in a short period of time.

2. Swelling is caused by the intrusion of water until the individual soil particles are full of water. This is a slow process, especially in clay-type soil and is the reason for requiring a prolonged soaking.

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:

Case 1 Procedure

- Water remains overnight in the test hole following the four-hour presoak. (Unless an overnight siphon is used.)

1. Adjust depth of water to 6 inches in the hole.
2. Take two (2) readings at thirty (30) minute intervals and report percolation rate as the slower of the two readings. Until stabilized or for a period of 4 hours.

NOTE: When a minimum amount of water remains due to a damaged hole or silting, the hole may be cleaned out and tested under Case 3, starting with the presoak.

Case 2 Procedure

- Soil with a fast percolation rate is encountered where two columns of 12-14 inches of water percolates in less than 30 minutes for each column during the presoak.

1. Begin test 15-30 hours after presoak.
2. Fill the hole twice with 12-14 inches of water. Observe to see if each column of water seeps away in less than 30 minutes. If so, proceed with the percolation test. If not, go to Case 3.
3. Refill hole to 6 inches above the bottom.
4. Measure from a fixed reference point at ten (10) minute intervals over a period of one (1) hour to the nearest $1/16^{th}$ inch. Add water at each 10-minute time interval.
5. Continue 10-minute readings as long as necessary to obtain a "stabilized" rate with the last 2 rate readings not varying more than 1/16th inch or for a duration of four (4) hours. The last water level drop will be considered in the percolation rate.

Case 3 Procedure

- No water remains in the test hole 15 -30 hours after the four-hour presoak.

1. Begin test 15-30 hours after presoak.
2. Clean out the silt and mud and add 2 inches of 3/8 inch pea gravel.
3. Adjust water depth to 6 inches above the pea gravel buffer and measure from a fixed reference point at 30-minute intervals to the nearest $1/16^{th}$ inch. NOTE: It is not necessary to record data points for the first hour as this is an adjustment period and a reestablishment of a wetted boundary.

4. Refill the hole as necessary between readings to maintain a 6-inch column of water over the pea gravel. If a fall of 1 inch or less is recorded, the test can continue without refilling until the next 30-minute reading interval.
5. Continue recording readings at 30-minute intervals for a minimum of four hours.
6. The last water level drop is used to calculate the percolation rate.

CALCULATIONS

Calculation Example

The percolation rate is reported in minutes per inch. For example, a 30-minute time interval with a 3/4-inch fall would be as follows:

30 minutes ÷ 3/4 inch = 40 minutes per inch (mpi)