COUNTY OF SISKIYOU

COMMUNITY DEVELOPMENT DEPARTMENT
Environmental Health

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APPENDIX 1

Siskiyou County Onsite Wastewater Treatment System (OWTS) Regulations and Technical Manual

ISSUED AND EFFECTIVE _____

FILED WITH THE CLERK OF SISKIYOU COUNTY

_____
Colleen Setzer
Clerk Recorder

DATED: _____

ISSUED BY THE SISKIYOU COUNTY HEALTH OFFICER

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Stephen Kolpackoff, MD,
Public Health Officer, Siskiyou County

DATED: _____

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List of Acronyms

ANSI	American National Standards Institute
APMP	Advanced Protection Management Program
ASTM	AAmerican Society of Testing Materials
BOS	Siskiyou County Board of Supervisors
CUPC	California Uniform Plumbing Code
SCEH	Siskiyou County Division of Environmental Health
SCC	Siskiyou County Code
STS	Supplemental Treatment System
SWRCB	State Water Resource Control Board or State Water Board
IAPMO	International Association of Plumbing and Mechanical Officials
LAMP	Local Agency Management Program
NCRWQCB	North Coast Regional Water Quality Control Board
NSF	National Sanitation Foundation
NSOWTS	Non-Standard Onsite Wastewater Treatment System
OWTS	Onsite Wastewater Treatment System
OWTS Policy	Water Quality Control Plan for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems
RTM	Siskiyou County Onsite Wastewater Regulations and Technical Manual
VPA	Variance Prohibition Area

Definitions

"Absorption Area means the entire area used for underground dispersion of the liquid portion of sewage including the area designated for a future replacement system. It may consist of a seepage pit, absorption field, or combination of the two. It may also consist of a cesspool, seepage bed, bottomless sand filter, or evapotranspiration-absorption system.

"Absorption Field" means a system of absorption trenches, a seepage trench, or a system of seepage trenches.

"Absorption Trench" means a ditch or a trench installed into soil, permeable saprolite, or diggable bedrock, with vertical sides and a substantially flat bottom "dispersal trench".

"Aerobic System" means an alternative system that incorporates a septic tank or other treatment facility, an aerobic sewage treatment facility, and a dispersal system to provide treatment before dispersal.

"Agent" means the Environmental Health Director or person authorized to act on behalf of the director who possesses a valid State of California Registered Environmental Health Specialist certificate.

"Alteration" means expansion or change in location of an existing system or any part thereof.

1. Major alteration is the expansion or change in location of the soil dispersal system, treatment unit, or any part thereof.
2. Minor alteration is the replacement or relocation of a septic tank or other components of the system other than the soil dispersal system, or a change in distribution technique or method.

"Alternative System" means any onsite wastewater treatment system approved by the director.

"Alternative Treatment Technologies" means an alternative system that incorporates aerobic and other treatment technologies or units not specifically described elsewhere in this policy.

"Approved Material" means construction items that have been approved for use by SCEH.

"Approved Criteria" means methods of design or construction that have been approved for use by SCEH.

"ASTM" means American Society of Testing Materials.

"Authorization Notice" means a written document issued by an agent establishing that an existing onsite wastewater treatment system appears adequate for its intended use.

"Authorized Representative" means a person with written authorization to act as another person's delegate.

"Automatic Siphon" means a hydraulic device designed to rapidly discharge the contents of a dosing tank between predetermined liquid levels.

"Bedroom" means any room within a dwelling accepted as a bedroom by state or local building departments.

"Biochemical Oxygen Demand" (BOD5) means the quantity of oxygen used in the biochemical oxidation of organic matter in five days at 20 degrees centigrade under specified conditions and reported as milligrams per liter (mg/L).

"Black Waste" means human body wastes including feces, urine, other substances of body origin, and toilet paper.

"Capping Fill System" means an alternative system that incorporates an absorption trench with an effective sidewall installed a minimum of twelve (12) inches into the natural soil below a soil cap of specified depth and texture.

"Carbonaceous Biochemical Oxygen Demand" (CBOD5) means BOD minus the nitrogenous oxygen demand, typically measured in mg/L.

"Chemical Toilet Facility" means a nonflushing, nonrecirculating toilet facility wherein black wastes are deposited directly into a chamber containing a solution of water and chemical.

"Clayey Soil" means mineral soil with over 40 percent clay that shrinks and develops wide cracks when dry and swells and shears when wet, forming slickensides and wedge-shaped structure. Clayey soil is very hard or extremely hard when dry, very firm when moist, and very sticky and very plastic when wet.

"Claypan" means a dense, compact clay layer in the subsoil. It has a much lower permeability than the overlying soil horizon from which it is separated by an abrupt boundary. Claypans are hard when dry and very sticky and very plastic when wet and impede movement of water, air, and growth of plant roots.

"Commercial Facility" means any structure or building or portion thereof other than a single-family dwelling.

"Commercial Food Service High Strength Waste Water" means wastewater that does not exceed 900 mg/L BOD and has a properly sized and functioning oil/grease interceptor.

"Community System" means an onsite system that serves more than one lot or parcel, more than one condominium unit, or more than one unit of a planned unit development.

"Completed Application" means an application form that is completed in full; is signed by the owner or owner's authorized representative and is accompanied by all required exhibits and fees.

"Conditions Associated with Saturation" means soil morphological properties that may indicate the presence of a water table that persists long enough to impair system function and create a potential health hazard. These conditions include depleted matrix chromas caused by saturation and not a relict or parent material feature, and the following:

1. High chroma matrix with iron depletions. Characterized by soil horizons whose matrix chroma is 3 or more in which there are some visible iron depletions having a value 4 or more and a chroma of 2 or less.
2. Iron-manganese concentrations as soft masses or pore linings may be present but are not diagnostic of conditions associated with saturation.
3. Depleted matrix with iron concentrations. Soil horizons whose matrix color has a value of 4 or more and a chroma of 2 or less as a result of removal of iron and manganese oxides. Some visible zones of iron concentration are present as soft masses or pore linings.
4. Depleted matrix without iron concentrations. Characterized by soil horizons whose color is more or less uniform with a value of 4 or more and a chroma of 2 or less as a result of removal of iron and manganese oxides. These horizons lack visible iron concentrations as soft masses or pore linings.
5. Reduced matrix. Characterized by soil horizons whose color has a value of 4 or more and a chroma of 2 or less with hues that are often, but not exclusively, on the gley pages of

the Munsell Color Book. Upon exposure to air, yellow colors form within 24 hours as some of the ferrous iron oxidizes.

6. Dark colored soils with organic matter accumulation. Mineral soils with a high amount of decomposed organic matter in the saturated zone, a value of 3 or less, and a chroma of 1 or less. Included in this category are organic soils with a minor amount of mineral matter.
7. Soils with a dark surface. The upper surface layer has a dark color with a value of 3 or less and a chroma of 1 or less immediately underlain by a layer with a chroma of 2 or less.
8. Iron stripping and staining in sandy soils. Soil horizons in which iron/manganese oxides or organic matter or both have been stripped from the matrix, exposing the primary base color of soil materials. The stripped areas and trans-located oxides or organic matter form a diffuse splotchy pattern of two or more colors.
9. Salt-affected soils. Characterized by soils in arid and semi-arid areas that have visible accumulations of soluble salts at or near the ground surface.
10. Dark colored shrink-swell soils. Vertisols whose colors have values of 3 or less and chromas of 1 or less. Iron concentrations may be present but are not diagnostic of conditions associated with saturation.

"Confining Layer" means a layer associated with an aquifer that because of low permeability does not allow water to move through it perceptibly under head differences occurring in the groundwater system.

"**Construction"** includes the installation of a new system or part thereof or the alteration, repair, or extension of an existing system. The grading, excavating, and earth-moving work connected with installation, alteration, or repair of a system or part thereof is considered system construction.

"Conventional Sand Filter" means a filter with 2 feet or more of sand filter media designed to chemically and biologically process septic tank or other treatment unit effluent from a pressure distribution system operated on an intermittent basis.

"Curtain Drain" means a groundwater interceptor that is designed to divert groundwater from the dispersal system. The drain creates a "curtain" to block water from reaching the dispersal system.

“Department” means Siskiyou County Environmental Health (SCEH)

"Design Capacity" means the maximum daily flow a system is designed to treat and disperse.

"Design Criteria" means the criteria used in designing onsite wastewater treatment systems including but not limited to dimensions, geometry, type of materials, size of drain media or filter media, absorption field sizing, depth, grade or slope, hydraulic loading rate, or any other factor relevant to the successful operation of the system. It does not include absorption area siting criteria.

"Designer" means a person who plans onsite wastewater treatment and dispersal technology for an onsite system.

"Director" means the Director of the Siskiyou County Community Development Environmental Health Division.

"Dispersal Trench" means a ditch or a trench installed into soil, permeable saprolite, or diggable bedrock, with vertical sides and a substantially flat bottom. "absorption trench."

"Distribution Box" means a watertight structure that receives septic tank or other treatment facility effluent and distributes it concurrently into 2 or more header pipes leading to the absorption area.

"Distribution Pipe" means an open-jointed or perforated pipe used in the dispersion of septic tank or other treatment facility effluent into absorption trenches, seepage trenches, or seepage beds.

"Distribution Unit" means a distribution box, dosing tank, diversion valve or box, header pipe, or other means of transmitting septic tank or other treatment unit effluent from the effluent sewer to the distribution pipes.

"Diversion Valve" means a watertight structure that receives septic tank or other treatment facility effluent through one inlet and distributes it to 2 outlets, only one of which is used at a time.

"Dosing Tank" means a watertight receptacle placed after a septic tank or other treatment facility equipped with an automatic siphon or pump.

"Dosing Septic Tank" means a unitized device performing functions of both a septic tank and a dosing tank.

"Drainfield" means an "absorption field" or “leach field”.

"Drain Media" means clean washed gravel or clean, crushed rock with a minimum size of 3/4 inch and a maximum size of 2-1/2 inches used in the distribution of effluent. The material must be durable and inert so that it will maintain its integrity, will not collapse or disintegrate with time, and will not be detrimental to the performance of the system. Drain media also includes any product or material approved by SCEH for distribution of effluent in an absorption field.

"Dwelling" means any structure or building or portion thereof that is used, intended, or designed to be occupied for human living purposes including but not limited to houses, houseboats, boathouses, mobile homes, recreational cabins, travel trailers, hotels, motels, and apartments.

"Effective Absorption Area" means the sidewall area within an absorption trench or a seepage trench from the bottom of the trench to a level 2 inches above the distribution pipes; the sidewall area of any cesspool, seepage pit, unsealed earth pit privy, graywater waste absorption sump seepage chamber, or trench with drain media substitute; or the bottom area of a pressurized soil dispersal system installed in soil.

"Effective Soil Depth" means the depth of soil material above a layer that impedes movement of water and air and growth of plant roots. Layers that differ from overlying soil material enough to limit effective soil depth are hardpans, claypans, fragipans, compacted soil, bedrock, saprolite, and clayey soil.

"Effluent Filter" means an effluent treatment device installed on the outlet of a septic tank or outside the septic tank in a separate enclosure and designed to prevent the passage of suspended matter larger than 3/16 inch in size. Filter shall be (NSF/ANSI) approved for septic tank effluent.

"Effluent Lift Pump" means a pump used to lift septic tank or other treatment facility effluent to a higher elevation.

"Effluent Sewer" means that part of the system of drainage piping that conveys partially treated sewage from a septic tank or other treatment facility into a distribution unit or an dispersal system.

"Emergency Repair" means immediate action to repair a failing system when sewage is backing up into a dwelling or building or to repair a broken pressure sewer pipe. It does not include the construction of new or additional absorption facilities but does include use of the septic tank as a temporary holding tank until new or additional absorption facilities can be permitted and constructed.

"Equal Distribution" means the distribution of effluent to a set of absorption trenches in which each trench receives effluent in equivalent or proportional volumes.

"Escarpment" means any naturally occurring slope greater than 50 percent that extends vertically 6 feet or more from toe to top, is characterized by a long cliff or steep slope that separates two or more comparatively level or gently sloping surfaces, and may intercept one or more layers that limit effective soil depth.

"Existing Onsite Wastewater Treatment System" means any installed onsite wastewater treatment system constructed in conformance with the rules, laws, and local ordinances in effect at the time of construction.

"Existing System" means "existing onsite wastewater treatment system."

"Failing System" means any system that discharges untreated or incompletely treated sewage or septic tank effluent directly or indirectly onto the ground surface or into public waters or that creates a public health hazard.

"Fecal Coliform" means bacteria common to the digestive systems of warm-blooded animals and cultured in standard tests. The term is typically used to indicate fecal pollution and the possible presence of enteric pathogens and is measured as colonies/100ml.

"Filter Fabric" means a woven or spun-bonded sheet material used to impede or prevent the movement of sand, silt, and clay into drain media.

"Fragipan" means a loamy subsurface horizon with high bulk density relative to the horizon above, seemingly cemented when dry, and weakly to moderately brittle when moist. Fragipans are mottled and low in organic matter, and they impede movement of water and air and growth of plant roots.

"Grade" means the rate of fall or drop in inches per foot or the percentage of fall of a pipe.

"Graywater" means household sewage other than "black wastes," such as bath water, kitchen waste water, and laundry wastes.

"Grease and Oils" means a component of sewage typically originating from food stuffs, consisting of compounds of alcohol or glycerol with fatty acids.

"Groundwater Interceptor" means any natural or artificial groundwater or surface water drainage system, including drain tile, curtain drain, foundation drain, cut banks, and ditches, that intercept and divert groundwater or surface water from the area of the dispersal system.

"Hardpan" means a hardened layer in soil caused by cementation of soil particles with silica, calcium carbonate, magnesium carbonate, iron, or organic matter. The hardness does not change appreciably with changes in moisture content. Hardpans impede movement of water and air and growth of plant roots.

"Header Pipe" means a tight-jointed part of the sewage drainage conduit that receives septic tank effluent from the distribution box, drop box, or effluent sewer and conveys it to the absorption area.

"Headwall" means a steep slope at the head or upper end of a land slump block or unstable landform.

"Holding Tank" means a watertight receptacle designed to receive and store sewage to facilitate treatment at another location.
"Holding Tank System" means an alternative system consisting of the combination of a holding tank, service riser, and level indicator (alarm), designed to receive and store sewage for intermittent removal for treatment at another location.
"Hydrosplitter" or **"Hydrosplitter"** means a hydraulic device to proportion flow under pressure by the use of one or more orifices.
"Individual System" means a system that is not a community system.
"Individual Water Supply" means a source of water and a distribution system that provides water for drinking, culinary, or household uses and is not a public water supply system.
"Industrial Waste" means any liquid, gaseous, radioactive, or solid waste or a combination thereof resulting from any process of industry, manufacturing, trade, or business or from the development or recovery of any natural resources.
"Intermittent Sand Filter" means a conventional sand filter.
"Intermittent Stream" means any public surface water or groundwater interceptor that continuously flows water for a period greater than two months in any one year but not continuously for that year.
"Invert" is the lowest portion of the internal cross section of a pipe or fitting.
"Lateral Pipe" means "distribution pipe."
"Maintenance" means taking the actions necessary to keep onsite system components properly functioning as designed. Maintenance is further defined as:

1. Major Maintenance is cleaning, repairing or replacing a broken or plugged effluent sewer pipe that:
    a. Is the same make and model; or
    b. Meets the requirements in this division; and
    c. Is performed by a certified maintenance provider or certified licensed installer.
2. Minor Maintenance includes, but is not limited to, repairing or replacing of a tank riser or lid, or pump, screen, filter, or other component internal to the tank that:
    a. Is the same make and model; or
    b. Meets the requirements in this division.

"Maintenance Provider" means a person who performs maintenance of onsite systems and:

1. Possesses adequate skills and knowledge regarding onsite wastewater treatment, absorption facilities, and system functions to competently inspect and maintain onsite systems, and
2. Is certified by the system manufacturer if required.

"Mechanical Sewage Treatment Facility" or "Mechanical Oxidation Sewage Treatment Facility" means an aerobic sewage treatment facility.
"Occupant" means any person living or sleeping in a dwelling.
"Onsite Sewage Disposal System" means "onsite wastewater treatment system."
"Onsite Wastewater Treatment System" (OWTS) means any existing or proposed subsurface onsite wastewater treatment and dispersal system including but not limited to a standard subsurface, alternative, engineered, or experimental systems.
"Owner" means any person who alone, jointly, or severally:

1. Has legal title to any single lot, dwelling, dwelling unit, or commercial facility;

2. Has care, charge, or control of any real property as agent, executor, administrator, trustee, commercial lessee, or guardian of the estate of the holder of legal title; or
3. Is the contract purchaser of real property.

"Permanent Groundwater Table" means the upper surface of a saturated zone that exists year-round or for a period of time that develops soil features that would inhibit the effectiveness of a OWTS by causing a public health or environmental hazard. The thickness of the saturated zone and resulting elevation of the permanent groundwater table may fluctuate as much as 20 feet or more annually, but the saturated zone and associated permanent groundwater table is present at some depth beneath land surface throughout the year.

"Permit" means the written document, issued and signed by an agent, that authorizes a permittee to install a system or any part thereof and, in some cases, to operate and maintain the system in accordance with the permit.

"Person" includes individuals, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof, and the federal government and any agencies thereof.

"Pollution" or **"Water Pollution"** means any alteration of the physical, chemical, or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt, or odor of the waters, or any discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state that, alone or in connection with any other substance, threatens to create a public nuisance or render such waters harmful, detrimental, or injurious to public health, safety, or welfare or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish, or other aquatic life or the habitat thereof.

"Portable Toilet" means any self-contained chemical toilet facility that is housed within a portable toilet shelter and includes but is not limited to construction-type chemical toilets.

"Pressure Distribution Lateral" means piping and fittings in pressure distribution systems that distribute septic tank or other treatment unit effluent to drain media through small diameter orifices.

"Pressure Distribution Manifold" means piping and fittings in a pressure distribution system that supply effluent from pressure transport piping to pressure distribution laterals.

"Pressure Distribution System" means any system designed to uniformly distribute septic tank or other treatment unit effluent under pressure in an dispersal system or treatment unit.

"Pressure Transport Piping" means piping that conveys sewage effluent from a septic tank or other treatment or distribution unit typically by means of a pump or siphon.

"Pretreatment" means the wastewater treatment that takes place prior to discharging any component of an onsite wastewater treatment system, including but not limited to pH adjustment, oil and grease removal, BOD5 and TSS reduction, screening, and detoxification.

"Privy" means a structure used for disposal of human waste without the aid of water. It consists of a shelter built above a pit or vault in the ground into which human waste falls.

"Projected Daily Sewage Flow" or **"Design Flow"** means the peak daily quantity of sewage production from a facility for which a system is sized and designed. The projected daily sewage flow allows for a safety margin and reserve capacity for the system during periods of heavy use.

"Public Health Hazard" means the presence of sufficient types or amounts of biological, chemical, physical, or radiological agents relating to water or sewage that cause or threaten to

cause human illness, disorders, or disability. These include but are not limited to pathogenic viruses, bacteria, parasites, toxic chemicals, and radioactive isotopes.

“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. This shall include an individual who possesses a Registered Environmental Health Specialist certificate, Registered Geologist, or licensed as a Professional Engineer. Soil scientist certified by the Soil Science Society of America can be considered qualified professionals for purposes of site evaluations if approved by the director.

"Recirculating Sand Filter (RSF)" means a sand filter wastewater treatment system in which a portion of the filtered effluent is mixed with septic tank effluent in a recirculation/dilution tank and redistributed to the filter.

"Recirculating Sand Filter System" means a recirculating sand filter and an dispersal system used to treat wastewater.

"Redundant Dispersal Field System" means a system in which two complete absorption fields are installed, the absorption trenches of each system alternate with each other, and only one system operates at a given time.

"Repair" means installation of all portions of a system necessary to eliminate a public health hazard or pollution of public waters created by a failing system.

1. Major repair is the replacement of the soil dispersal system, treatment unit, or any part thereof.
2. Minor repair is the replacement of a septic tank.

"Residential Strength Wastewater" means septic tank effluent that does not typically exceed five-day biochemical oxygen demand (BOD5) of 300 mg/L; total suspended solids (TSS) of 150 mg/L; total Kjeldahl nitrogen (TKN) of 150 mg/L; oil & grease of 25 mg/L; or concentrations or quantities of other contaminants normally found in residential sewage.

"Sand Filter Media" means a medium sand or other approved material used in a conventional sand filter. The media must be durable and inert so that it will maintain its integrity, will not collapse or disintegrate with time, and will not be detrimental to the performance of the system. The particle size distribution of the media must be determined through a sieve analysis conducted in accordance with ASTM C-117 and ASTM C-136. The media must comply with the following particle size distribution: 100 percent passing the 3/8 inch sieve, 95 percent to 100 percent passing the No. 4 sieve, 80 percent to 100 percent passing the No. 8 sieve, 45 percent to 85 percent passing the No. 16 sieve, 15 percent to 60 percent passing the No. 30 sieve, 3 percent to 15 percent passing the No. 50 sieve, and 4 percent or less passing the No. 100 sieve.

"Sand Filter Surface Area" means the area of the level plane section in the medium sand horizon of a conventional sand filter located 2 feet below the bottom of the drain media containing the pressurized distribution piping.

"Sand Filter System" means an alternative system that combines a septic tank or other treatment unit; a dosing system with effluent pump and controls or dosing siphon, piping and fittings; a sand filter; and an dispersal system to treat wastewater.

"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 has rock structure instead of soil structure and does not include hard bedrock or hard fractured bedrock.

"Saturated Zone" means a three-dimensional layer, lens, or other section of the subsurface in which all open spaces including joints, fractures, interstitial voids, and pores are filled with groundwater. The thickness and extent of a saturated zone may vary seasonally or periodically in response to changes in the rate or amount of groundwater recharge or discharge.

"Scum" means a mass of sewage solids floating at the surface of sewage that is buoyed up by entrained gas, grease, or other substances.

"Seepage Area" means "effective seepage area."

"Seepage Bed" means an absorption system having absorption trenches wider than 3 feet.

"Seepage Pit" means a cesspool that has a treatment facility such as a septic tank ahead of it.

"Seepage Trench System" means a system with absorption trenches with more than twelve (12) inches of drain media below the distribution pipe (Leachfield trench system).

"Septage" means the domestic liquid and solid sewage pumped from septic tanks, cesspools, holding tanks, vault toilets, chemical toilets or other similar domestic sewage treatment components or systems and other sewage sludge not derived at sewage treatment plants.

"Septic Tank" means a watertight receptacle that receives sewage from a sanitary drainage system and is designed to separate solids from liquids, digest organic matter during a period of detention, and allow the liquids to discharge to a second treatment unit or to a soil dispersal system.

"Septic Tank Effluent" means partially treated sewage that is discharged from a septic tank.

"Serial Distribution" means the distribution of effluent to a set of absorption trenches constructed at different elevations in which one trench at a time receives effluent in consecutive order beginning with the uppermost trench by means of a drop box, a serial overflow, or another approved distribution unit. The effluent in an individual trench must reach a level of 2 inches above the distribution pipe before effluent is distributed to the next lower trench.

"Sewage" means water-carried human and animal wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with any groundwater infiltration, surface waters, or industrial waste that may be present.

"Sewage Disposal Service" means:

1. The construction of onsite wastewater treatment systems (including the placement of portable toilets) or any part thereof;
2. The pumping out or cleaning of onsite wastewater treatment systems (including portable toilets) or any part thereof;
3. The disposal of material derived from the pumping out or cleaning of onsite wastewater treatment systems (including portable toilets); or
4. Grading, excavating, and earth-moving work connected with the operations described in subsection (a) of this section.

"Site Evaluation Report" means a report on the evaluation of a site to determine its suitability for an onsite system prepared in accordance with Part 1 or the RTM.

"Slope" means the rate of fall or drop in feet per 100 feet of the ground surface. It is expressed as percent of grade.

"Soil Permeability" refers to the ability of a soil to transmit water or air.

"Soil Texture" means the amount of each soil separate in a soil mixture. Field methods for judging the texture of a soil consist of forming a cast of soil, both dry and moist, in the hand and pressing a ball of moist soil between thumb and finger.

1. The major textural classifications are defined as follows and shown in Table 5.
    a. Sand: Individual grains can be seen and felt readily. Squeezed in the hand when dry, this soil will fall apart when the pressure is released. Squeezed when moist, it will form a cast that will hold its shape when the pressure is released but will crumble when touched.
    b. Loamy Sand: Consists primarily of sand, but has enough silt and clay to make it somewhat cohesive. The individual sand grains can readily be seen and felt. Squeezed when dry, the soil will form a cast that will readily fall apart, but if squeezed when moist, a cast can be formed that will withstand careful handling without breaking.
    c. Sandy Loam: Consists largely of sand, but has enough silt and clay present to give it a small amount of stability. Individual sand grains can be readily seen and felt. Squeezed in the hand when dry, this soil will readily fall apart when the pressure is released. Squeezed when moist, it forms a cast that will not only hold its shape when the pressure is released but will withstand careful handling without breaking. The stability of the moist cast differentiates this soil from sand.
    d. Loam: Consists of an even mixture of the different sizes of sand and of silt and clay. It is easily crumbled when dry and has a slightly gritty, yet fairly smooth feel. It is slightly plastic. Squeezed in the hand when dry, it will form a cast that will withstand careful handling. The cast formed of moist soil can be handled freely without breaking.
    e. Silt Loam: Consists of a moderate amount of fine grades of sand, a small amount of clay, and a large quantity of silt particles. Lumps in a dry, undisturbed state appear quite cloddy, but they can be pulverized readily; the soil then feels soft and floury. When wet, silt loam runs together in puddles. Either dry or moist, casts can be handled freely without breaking. When a ball of moist soil is passing between thumb and finger, it will not press out into a smooth, unbroken ribbon but will have a broken appearance.
    f. Clay Loam: Consists of an even mixture of sand, silt, and clay that breaks into clods or lumps when dry. When a ball of moist soil is pressed between the thumb and finger, it will form a thin ribbon that will readily break, barely sustaining its own weight. The moist soil is plastic and will form a cast that will withstand considerable handling.
    g. Silty Clay Loam: Consists of a moderate amount of clay, a large amount of silt, and a small amount of sand. It breaks into moderately hard clods or lumps when dry. When moist, a thin ribbon or 1/8-inch wire can be formed between thumb and finger that will sustain its weight and will withstand gentle movement.
    h. Silty Clay: Consists of even amounts of silt and clay and very small amounts of sand. It breaks into hard clods or lumps when dry. When moist, a thin ribbon or 1/8 inch or smaller wire formed between thumb and finger will withstand considerable movement and deformation.

i. Clay: Consists of large amounts of clay and moderate to small amounts of sand and silt. It breaks into very hard clods or lumps when dry. When moist, a thin, long ribbon or 1/16-inch wire can be molded with ease. Fingerprints will show on the soil, and a dull to bright polish is made on the soil by a shovel.

2. Soil textural characteristics described in the United States Department of Agriculture Textural Classification Chart are incorporated herein by reference. This textural classification chart is based on the Standard Pipette Analysis as defined in the United States Department of Agriculture, *Soil Conservation Service Soil Survey Investigations Report No. 1 (See Table 5).*

"Soil with Rapid or Very Rapid Permeability" means:

1. Soil that contains 35 percent or more of coarse fragments 2 millimeters in diameter or larger by volume with interstitial soil of sandy loam texture or coarser;
2. Coarse textured soil defined as loamy sand or sand in this rule; or
3. Stones, cobbles, gravel, and rock fragments with too little soil material to fill interstices larger than 1 millimeter in diameter.

"Split Waste Method" means a process where black waste sewage and graywater from the same dwelling or building are managed by separate systems.

"Standard Subsurface System" means an onsite wastewater treatment system consisting of a septic tank, distribution unit, and dispersal system constructed in accordance with this policy.

"Subsurface Absorption System" means the combination of a septic tank or other treatment unit and an effluent sewer and dispersal system.

"Subsurface Sewage Disposal" means "subsurface wastewater treatment."

"Subsurface Disposal System" means "subsurface absorption system."

"Subsurface Wastewater Treatment" means the dispersal of wastewater from a septic tank or other treatment unit into the zone of aeration to be further treated through physical, chemical, or biological processes.

"System" or "onsite system" means "onsite wastewater treatment system."

"Test Pit" means an open pit dug to sufficient size and depth to permit thorough examination of the soil to evaluate its suitability for subsurface wastewater treatment.

"Tile Dewatering System" means an alternative system in which the dispersal system is encompassed with field collection drainage tile to reduce and control a groundwater table and create a zone of aeration below the bottom of the dispersal system.

"Toilet Facility" means a fixture housed within a toilet room or shelter to receive black waste.

"Total Kjeldahl Nitrogen" (TKN) means the combination of ammonia and organic nitrogen, excluding nitrate and nitrite nitrogen.

"Total Nitrogen" (TN) means the sum of all nitrogen forms.

"Total Suspended Solids" (TSS) means solids in wastewater that can be removed readily by standard filtering procedures in a laboratory and reported as milligrams per liter (mg/L).

"Treatment" means the alteration of the quality of wastewaters by physical, chemical, or biological means or combination thereof to reduce potential degradation of water quality or the environment and risk to public health.

"Treatment Standard 1" means a 30-day average of less than 20 mg/L of BOD5 and 20 mg/L of TSS. A 30-day average of less than 17 mg/L of CBOD5 is acceptable in lieu of the BOD5 value.

"Treatment Standard 2" means a 30-day average of less than 20 mg/L of BOD5 and 20 mg/L of TSS, a 30-day geometric mean of less than 400 fecal coliform per 100 milliliters, and a 30-day average of 30 mg/L of TN. A 30-day average of less than 17 mg/L of CBOD5 is acceptable in lieu of the BOD5 value.

"Underdrain Media" means the material placed under the sand filter media in a sand filter and consists of clean, washed pea gravel with 100 percent passing the 1/2 inch sieve, 18 to 100 percent passing the ¼ inch sieve, 5 to 75 percent passing the No. 4 sieve, 24 percent or less passing the No. 10 sieve, 2 percent or less passing the No. 16 sieve, and 1 percent or less passing the No. 100 sieve.

"Unstable Landforms" means areas showing evidence of mass downslope movement such as debris flow, landslides, rockfall, and hummock hill slopes with undrained depressions upslope. Examples are landforms exhibiting slip surfaces roughly parallel to the hillside; landslide scars and curving debris ridges; fences, trees, and telephone poles that appear tilted; and tree trunks that bend uniformly as they enter the ground. Active sand dunes are unstable landforms.

"Vertisols" means a mineral soil characterized by a high content of swelling-type clays that in dry seasons cause the soils to develop deep, wide cracks.

"Wastewater" means "sewage."

"Zone of Aeration" means the unsaturated zone that occurs below the ground surface and above the point at which the upper limit of the water table exists.

Introduction

California Water Code section 13140 directs the State Water Resources Control Board (State Water Board or SWRCB) to formulate and adopt state policy for water quality control. Water Code sections 13290-13291.7 requires the State Water Board to adopt and implement regulations or standards for the permitting and operation of onsite wastewater treatment systems (OWTS).

On June 19, 2012, the State Water Board adopted the *Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems* (OWTS Policy). The policy took effect on May 13, 2013.

Siskiyou County Code (SCC) Section 5, Sanitation and Health; Chapter 2, Sewage Disposal provides the legal authority for the management of Onsite Wastewater Treatment Systems, and finds that the dispersal field (leach field) method of sewage treatment and disposal is the most appropriate for rural lands, and is considered a permanent means of sewage disposal, in Siskiyou County. Siskiyou County Code, Section 5; Chapter 2.02 gives authority to the Siskiyou County Health Officer and his authorized representative, Sections 5-2.03&4, as the Siskiyou County Health Department to implement and carry out the provisions as set forth in this chapter.

Siskiyou County *Onsite Wastewater Treatment System Code set forth in SCC 5.2, provides the foundation for the Proposed Siskiyou County Regulations and Technical Manual* (RTM) which will effectively replace the said, existing, *Siskiyou County Sewage Disposal Code*. The Proposed Siskiyou County RTM will in turn provide the foundation for the Proposed Siskiyou County Local Area Management Plan and comply with Tier Two (2) regulations, as set forth from the State Water Board; Water Quality Control Policy for Siting Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems. Whenever a definition differs between the proposed RTM and Local Agency Management Plan (LAMP), the definition from the RTM shall apply.

Eligibility

A site, where no portion of the parcel is within of two-hundred (200) feet from a public sewer can be evaluated for Onsite Wastewater Treatment System (OWTS) use. Suitable soil conditions and land form features are necessary for an OWTS to perform in a manner which protects public health and the environment. In some cases, parcels lacking public sewer service may not support the use of an OWTS due to poor soil conditions and/or other unsuitable features as determined by the Health Officer.

A particular building situation may not be allowed to utilize an OWTS because of:

1. Lack of suitable soil depth; or impervious or saturated soil conditions.
2. Steep slopes (greater than thirty percent).
3. Failure to meet designated setback requirements.
4. Other factors that may be identified by the Health Officer.

County Code SCC 5-2.14 authorizes the Board of Supervisors (BOS) to declare a moratorium on the issuance of OWTS permits in areas of existing or potential community contamination problems. There are no areas in Siskiyou County subject to such moratorium at the date of this document.

Prohibitions

The following practices and conditions are prohibited in Siskiyou County:

1. Cesspools of any kind or size.
2. Holding tanks as a permanent means of sewage disposal except as specified in Special Areas see (SCC 5-2.070).
3. OWTS receiving a projected flow over 10,000 gallons per day unless permitted through the Regional Water Quality Control Board (RWQCB).
4. 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, or a pond.
5. OWTS installed on slopes greater than thirty (30) percent.
6. Decreased leaching area for dispersal systems without a fifty (50) percent decrease in nitrate reduction from the waste stream as certified by a Qualified Professional.
7. New OWTS installation without one-hundred (100) percent reserve area for a replacement system.
8. OWTS utilizing supplemental treatment without periodic monitoring or inspections.
9. Less than two (2) feet of separation between the bottom of dispersal system trench to groundwater.

Areas of Special Consideration

The following areas require wet weather testing as predominant soils encountered are group E and F soils.

North County Areas of Vertisol Soils:

1. Klamath River Country Estates
2. Irongate Lake Estates
3. Copco Lake
4. Klamathon

Wet weather percolation testing in the above areas shall be verified and signed by a Qualified Professional. Wet weather conditions are further defined in the Percolation Testing Procedures found in Appendix I.

Areas of High Density OWTS:

1. Greenview
2. Edgewood
3. Carrick Addition
4. Dewitt Park
5. Macdoel
6. Tenant

The above identified areas are communities with small lot size and special attention is required to insure that all setback requirements and OWTS system design considerations are maintained.

Areas of Volcanic Ash Soils:

1. Mt. Shasta
2. Mt. Shasta Vista
3. Big Springs Ranchos

In areas of Siskiyou County where conventional leach field applications are warranted, and soils encountered are volcanic ash, or silts derived from volcanic activity within the influence of Mt. Shasta, chamber leach field systems are prohibited due to their high rate of historic failure.

In addition, any area of the County where there's a reasonable possibility of encountering seasonal high groundwater, the agent when conducting an on-site evaluation shall consider and make a determination as to the depth of the groundwater during wet weather conditions. This determination shall be used to establish the required amount of separation from the bottom of any proposed leach field trench to the highest level of the seasonal groundwater fluctuation, as further defined in Sec. 1.3 of this document.

Part 1 - On-Site Evaluation

On-Site evaluations for the purpose of OWTS permitting shall be completed with a SCEH representative or Qualified Professional to ensure proper OWTS design and compliance with site suitability criteria.

Qualified Professional means a Registered Civil Engineer, Registered Environmental Health Specialist, Professional Geologist, or Certified Soil Scientist who has experience designing standard or non-standard wastewater treatment systems. Site evaluations shall be conducted in accordance with the following standards. General site features to be determined include:

1. Land area available for primary and one-hundred (100) percent replacement dispersal area.
2. Ground slope and soil characteristics (limiting soil profile layers and anticipated ground water levels) in the dispersal field area (primary and replacement areas).
3. Location of cut banks, fills, or evidence of past grading activities, natural bluffs, soil landscape formations and unstable land forms in the dispersal field and replacement area.
4. Location of wells, intercept drains, streams or other bodies of water on the property and within one-hundred (100) feet on adjacent properties.
5. Identification of critical setbacks to observed features.

1.1 Soil Profiles

Soil characteristics shall be evaluated by direct observation of soil profile pits or excavations. A minimum of one (1) backhoe excavation in the primary dispersal field and one (1) in the replacement area is required and additional soil profile excavations as determined by agent may be needed to establish a suitable dispersal field area.

In cases where backhoe access is limited, test holes may be augured with prior approval from SCEH.

In the evaluation of new subdivisions, no less than two (2) soil excavations shall be made to identify a suitable primary and replacement dispersal field for each proposed parcel.

1. A site map showing a typical backhoe test pit is presented in Standard Details, Appendix D.1. The details of said sketch shall be observed and reported from the ground surface to a limiting condition. Trench depths shall be a minimum of five feet below the bottom of the proposed leach field trench where fluctuating high seasonal groundwater is suspected (during wet weather conditions) and a minimum of three feet below the

trench bottom when groundwater is known to be substantially greater than eight feet. Thickness of different soil layers shall be logged and their color described (using Munsell Color Identification method). Additional descriptions for each soil layer shall include their structure, texture, density and relative moisture content using the USDA method or equivalent.

2. Representative textural analysis samples shall be taken and analyzed for total sand, silt and clay content (using the USDA method) in areas where required wet-weather perc testing of Zone 3 and Zone 4 soils (Appendix A) is being requested outside of wet weather conditions. Soil textural samples shall also be taken in coarse grained and or well drained soils (soil group A&B) that are encountered in areas of suspected high seasonal groundwater.
3. Depth to limiting conditions such as hardpan, rock strata, fractured rock or impermeable soil.
4. Depth to observed groundwater.
5. Depth to mottled soil layers and description of the mottling.
6. Any other prominent soil feature that may affect the site suitability, such as stoniness, root zones, soil pores etc.

1.2 Soil Testing

Soil testing to demonstrate suitable dispersal field conditions shall be based on the most relative soil horizon encountered within three (3) feet of the anticipated dispersal trench bottom. This applies to both **textural analysis** and **percolation testing**.

Soil samples representing the relative soil horizon(s) within the excavated soil profile shall be collected under the direction of SCEH or Qualified Professional and analyzed for texture analysis by a California Certified Laboratory. The results shall be plotted on the Soil Percolation Suitability Chart (soil textural triangle) presented in Appendix A.

Soils that fall within Zone 1 have minimal filtration capabilities and require increased separation to seasonal high groundwater (Appendix A).

Soils within Group B are generally suitable for onsite sewage disposal and may not require further testing if adequate separation to groundwater exists. See Table 2 for perspective leach field sizing parameters. Alternative sizing can be approved with acceptable percolation test results.

Percolation testing of soils falling within Zone 1 and Zone 2 (Appendix A) may occur outside of wet weather conditions provided the test holes are adequately presoaked as described in the Percolation Test Procedures which follow.

Wet weather percolation testing (section 1.3.2) is required for soils that fall within Zones 3 and 4 in the North County Subdivisions. Wet weather percolation testing requirements can be waived if representative soil textural analysis samples fall within Zones 1 or 2 on the USDA soil profile chart (Appendix A). The number of soil samples shall be determined onsite by SCEH or a Qualified Professional and taken from the most appropriate soil layers in the exploratory excavations.

1.2.1 Percolation Test Method

The following procedures are required for determining a stabilized percolation rate.

1. Digging a Test Hole – After identifying the appropriate soil layer within three (3) feet of the anticipated trench bottom, dig a test hole approximately eight (8) inches square or bore a hole eight (8) inches in diameter into the soil layer to be tested. The depth of the percolation zone should be approximately twelve (twelve (12)) inches.
2. Preparation of a Test Hole – Remove any smeared soil surfaces from the sides of the hole to provide a natural soil interface for infiltrating water. Remove loose material from the bottom of the hole and add an inch or two of coarse sand or fine gravel to protect the bottom from scouring if necessary.
3. Presoaking a Test Hole – All test holes shall be presoaked the day prior to percolation testing with the date and time noted on the percolation form. Percolation testing shall not be performed if substantial water from the presoak remains in the holes in a static, non-percolating condition the day of testing.
4. Fill the Test Hole - Saturate the test hole with water to at least twelve (12) inches above the bottom of the hole.
5. Start the Test - Begin the test with twelve (12) inches of water above the bottom of the hole. Record the drop in water level every thirty (30) minutes for four (4) hours. When testing soils with rapid percolation rates, refill the hole to twelve (12) inches as needed and restart the test making a notation on the percolation form. Refill the holes a minimum of three times or until a stabilized percolation rate is attained. Document the results on the SCEH Percolation Testing Form, or equivalent.

1.3 Depth to Groundwater Determinations

The anticipated highest level of first encountered groundwater shall be by direct observation of groundwater levels during wet weather conditions or reported as the highest extent of soil mottling observed within the soil profile when applicable.

1.3.1 Soil Mottling

In most cases, ground water levels and seasonally saturated soils can be predicted (summer or winter) by the highest extent of soil mottling observed in the soil profile. The most conservative approach to dispersal field design is based on the assumption that mottling levels reflect seasonal saturation.

Certain landforms and or geologic formations, e.g. limestone, are mottled naturally and not necessarily representative of fluctuating, seasonal changes in groundwater levels. Conversely, very coarse soils and gravel may not exhibit mottling as a result of fluctuating seasonal groundwater levels. For these conditions, the highest extent of saturation must be determined by the **direct observation** method. Site evaluators shall use the direct observation method whenever uncertainties about groundwater levels occur.

Information about areas where transient water tables occur may be obtained from SCEH Land Use staff.

1.3.2 Wet Weather Criteria

Rainfall totals vary considerably in Siskiyou County particularly between its northern and southernmost portions. As a result, the wet weather testing season opens after one half of the average annual rainfall (precipitation-rainfall only; excluding snowfall) occurs within each perspective area of the county between the months of January and the end of April. SCEH division tracks the 'wet weather data' annually between the months of October through the end of April. The test period may open early if SCEH determines that saturated conditions exist. Additionally, the test period may be extended if SCEH determines that saturated conditions exist. The wet weather testing period may not open annually due to lack of precipitation.

Wet weather percolation testing is required in all of the existing north county subdivisions where heavy clay (mostly Zone 3 and some Zone 4) soils are inherent to the provincial, parent, volcanic rock. Wet weather percolation test are to be performed and/or verified by a Registered Civil Engineer or Qualified Professional.

1.3.3 Direct Observation Method

Direct observation of groundwater levels shall be made by observing backhoe excavations during the wet weather season. A minimum of one pit shall be dug in each of the primary and reserve leach field areas. In areas where groundwater levels fluctuate substantially between the wet and dry season, it may be necessary to monitor groundwater levels over an extended period of time by the installation of monitoring wells (two minimum). The frequency and number of groundwater elevation measurements shall be determined by SCEH or by the Qualified Professional. .

1.3.4 Monitoring Well/ Observation Well Construction

The construction of monitoring wells must conform as closely as possible to Appendix D.2, Typical Observation Well Construction Detail. Wells must be augured, drilled, or bored. The placement of pipe in backhoe pits is permissible if done under the direction of SCEH staff or by a Qualified Professional. Well depths must be sufficient to verify the required groundwater separation, from the bottom of the proposed dispersal trench and the corresponding soil types and textures.

1.4 Reporting of Data

Monitoring well measurements must be recorded in tabular form and all measurements taken shall be included. Appendix B provides a typical monitoring-observation well reporting form to record the data. All data must be submitted with the proposed OWTS design and permit application.

1.5 SCEH Responsibilities for Monitoring Well Notification

SCEH will verify that all required information is complete and accurate and will make a minimum of one site visit to measure and record water levels in each monitoring well reported.

Part 2 - Design

The completed site evaluation will address each of the following site criteria in order to provide the most current and effective OWTS design parameters to protect water quality, prevent health hazards, and other nuisances which may arise from the improper discharge of wastewater. All OWTS shall be designed, constructed and operated in a manner that ensures the protection of Public Health, and do not adversely contribute to, or impact groundwater quality.

2.1 Wastewater Flow Rates

Estimates of wastewater flows for the design of conventional **domestic** OWTS shall be based on one-hundred and fifty (150) gallons per day (gpd) per bedroom or twelve (12) gpd per bedroom up to three (3) bedrooms if the home utilizes current water saving devices; additional bedrooms will be estimated at seventy-five (75) gpd. Residential OWTS shall be sized for a minimum flow of two-hundred and forty (240) gpd projected flow.

Estimated wastewater flow rates for systems receiving **greater than 1500 gpd and/or from commercial** establishments shall take into account peak loading rates and the chemical characteristics of the wastewater. Estimates of wastewater flow expected from various types of establishments are listed in Appendix C.

2.2 Septic Tank Sizing

Septic Tanks shall be sized in accordance with Table 1 – Septic Tank Sizing Requirements, below. Septic tanks shall be constructed and installed as specified in Part 4, Section 4.3.

Table 1 - Septic Tank Sizing Requirements

Required Tank Volume	Intended Use
750 gallons	2 Bedroom Cabin/Mobile Home
1000 gallons	3 Bedroom Residence
twelve (12)00 gallons	4 Bedroom Residence
1500 gallons	5 to 6 Bedroom Residence
Two Times Daily Flow	Other Applications (E.g. commercial, multi-family, etc.)

2.3 Standard (Gravity) OWTS

2.3.1 Application Rates

The design of a conventional **gravity-flow dispersal system** shall be based on the estimated daily flow set forth in section 2.1. Soil application rates derived from either stabilized percolation rates and/or soil texture as listed in the Table 2. The application rates associated with the soil texture as shown in the table below can be used to calculate dispersal system size.

Table 2 – Soil Application Rates (150 gallons per day per bedroom)

Perc Rate Range (mpi)	Soil Texture	Soil Group	Effective Soil Depth	Soil Application Rate ($gpd/ft^{2)}$	Lineal Feet of Trench per Bedroom	
					2ft. X 1ft. trench	3ft. X 1ft. trench
1-5	Sand, Coarse Loamy Sand	A	24”-36”	0.9	33	33
			36”+	1.0	38	30
6-15	Loamy Sand	B	24”-36”	0.9	42	33
			36” +	1.0	38	30
16-30	Sandy Loam	C	24”-36”	0.7	54	42
			36” +	0.8	47	38
31-45	Sandy Clay Loam, Loam	D-1	24”-36”	0.6	62.5	50
			36” +	0.7	54	42
46-60	Silty Loam	D-2	24”-36”	0.5	75	60
			36” +	0.6	62.5	50
61-90	Clay Loam	E-1	24”-36”	0.35	105	85
			36” +	0.4	94	75
91- 120	Silty Clay Loam	E-2	24”-36”	0.25	150	120
			36” +	0.3	125	100
NON STANDARD /SUPPLEMENTAL OWTS REQUIRED PRESSURE DISTRIBUTION APPLICATION RATE						
120-240	Silty Clay, Clay	F	24” min.	0.5	Per agent approved certified design	

As described in Part 1 – Site Evaluation, soil application rates for sizing OWTS dispersal trenches shall be based on percolation testing and/or textural analysis of the most representative soil layer encountered within the soil column beneath the trench bottom.
Soils having percolation rates faster than five (5) minutes per inch (subject to groundwater separation requirements) or slower than twelve (12) minutes per inch may not be suitable for the installation of a standard (gravity-flow) dispersal system and may require the consideration of a Non-Standard Alternative dispersal system.

2.3.2 Dispersal Field Sizing – Gravel-less Chambers

Gravel-less chambers may be suitable for certain sites and the overall required square footage of absorption area would remain the same as the gravel trench as shown above if high capacity infiltrators were utilized ($6ft^2$ per lineal foot of trench). High capacity infiltrators have a height of eighteen (18) inches (1.5ft) and a width of three (3) feet (2(1.5ft)) + 3ft = $6ft^2$).

2.3.3 Dispersal Field Sizing – Gravel Trench

To calculate the required length of trench for a typical gravel and perforated pipe, gravity-flow dispersal field:

1. Divide the projected **daily flow** by the appropriate **soil application rate** – this yields the **total square footage of absorption area** required in the dispersal field.

   Example: **Daily flow** = 360gpd / **Application rate** = $0.4gpd/ft^2$
   $360/0.4ft^2$ = **$900ft.^2$**

2. The **total lineal feet of dispersal field trench** needed is determined by dividing the **total square footage of absorption area** required (**$900ft^2$** from above) by the **useable square footage of trench sidewall and bottom width per lineal foot of trench** (as measured <u>beneath</u> the perforated pipe).

   Soil conditions allowing the use of twelve (12) inches (1.0 ft.) of drain-rock; twelve (12) inches below the perforated pipe and six (6) inches above the pipe would result in two (2) ft^2 of absorption area per lineal foot of trench**.** The addition of three (3) feet width for the bottom of the trench would provide five (5) ft^2 per lineal foot of trench.

   2(SWA) + BTA = ($1.0ft^2$ +$1.0ft^2$ +$3ft^2$ =$5ft^2$)

3. With five (5) ft^2 of absorption area per lineal foot of trench, the 900 ft^2 of required absorption area can be achieved by dividing 1800 ft^2 by five (5) ft^2 yielding 180 lineal feet of three (3) foot width trench.

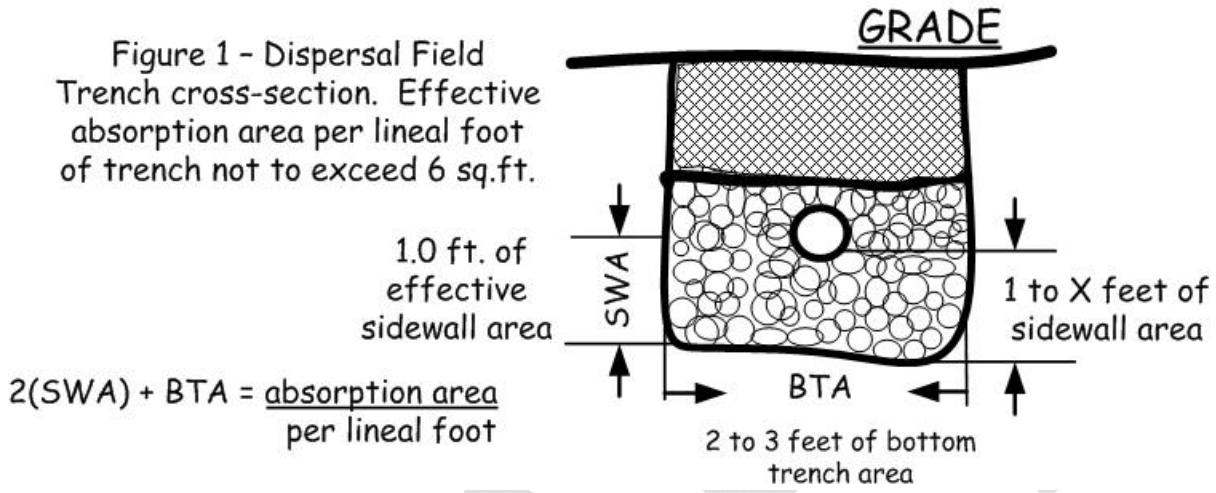


Figure 1 – Dispersal Field Trench Cross-section

2.3.4 Dispersal Field Siting

Gravity flow dispersal trenches shall be placed within native soils; the use of fill materials is prohibited.

All dispersal trenches shall be oriented parallel to the natural ground contour.

Trench depth shall not exceed ten (10) feet, when necessary; with a maximum gravel column height of four (4) feet.

Trench width shall not exceed three (3) feet for both rock and chamber leach fields.

Trench spacing shall have a minimum of (undisturbed soil) two (2) times the trench width as measured from the side of the leach field trench. Dispersal field trenches shall not exceed one hundred (100) feet in length.

Effluent shall be evenly distributed among trenches by use of SCEH-approved distribution boxes that may be equipped with speed levelers or comparable devices.

Dispersal fields and tanks shall meet minimum horizontal separation distance from structures, property lines, surface waters, wells, steep slopes, public water intakes, and other physical site features. The complete list of setback requirements is provided in Appendix E.

2.3.5 Ground Slope and Stability

Natural ground slope intended for dispersal field placement shall not exceed thirty (30) percent. All soils to be utilized for dispersal field placement shall be stable.

2.3.6 Soil Depth

Soil depth is measured vertically to the point where bedrock, hardpan, impermeable soils or saturated soils are encountered. Soils tested with percolation rates faster than one hundred-twenty (12) minutes per inch shall have a minimum of two (2) feet of soil depth below bottom of trench (see table 2)

In cases where there's at least two (2) feet of soil beneath the trench bottom and stabilized soil percolation rates are slower than one hundred-twenty (12) minutes per inch, a Non-Standard OWTS is required (see section 2.4).

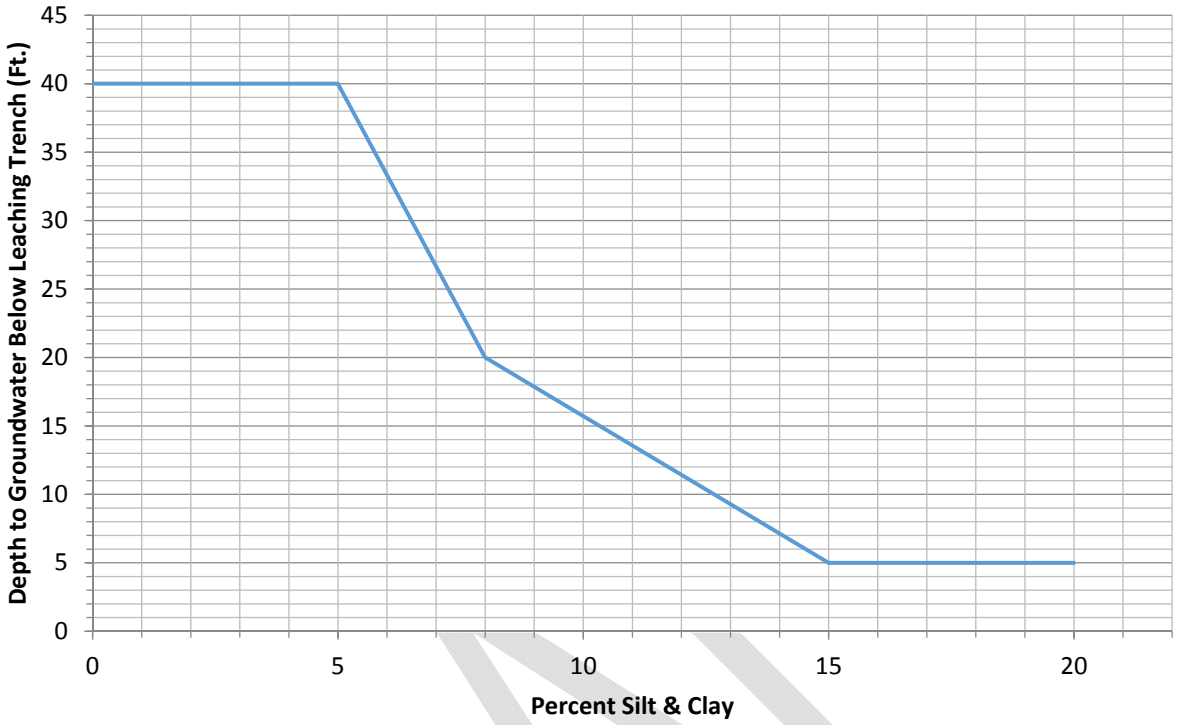
In no case shall any type of OWTS be placed where there is less than two (2) feet of separation to groundwater beneath the bottom of the trench dispersal area and/or where soils have a percolation rate slower than two-hundred and forty (240) minutes per inch.

2.3.7 Depth to Groundwater

The required amount of separation to groundwater (in feet), from an elevation representative of the bottom of a proposed leach field trench, is dependent on the total combined percentage of silt and clay (as determined by textural analysis) and it's corresponding value found in Table 3. The depth of soil textural samples shall be performed under the direction of SCEH or a Qualified Professional and analyzed by a California Certified Laboratory.

As shown in Figure 2, where soils contain a combined percentage of **silt and clay of five (5) percent or less, a forty (40) foot separation** between the trench bottom and seasonal high groundwater is required to protect groundwater. Soils that contain **fifteen (15) percent or greater combined silt and clay would require a five (5) foot separation** between the trench bottom and the seasonal high groundwater.

Figure 2 – Minimum Depth to Groundwater Below Leaching Trench



2.3.8 Disposal Trench Design, Materials, & Construction Requirements

Disposal trenches shall be constructed in accordance with the standards contained in the following, unless otherwise specified:

1. Length minimum-----50 feet
2. Length maximum----100 feet
3. Bottom width minimum-----24 inches

There shall be a minimum of twelve (12) inches of backfill required over the leach rock material and filter fabric or chamber units within each disposal trench. Leach rock filter material shall extend the full width and length of the disposal trench to a depth of not less than eighteen (18) inches. There shall be at least twelve (12) inches of leach rock material under the distribution pipe and at least two (2) inches over the distribution pipe.

Leach rock material shall consist of one (1) to three (3) inch washed gravel or crushed rock void of fines.

Filter fabric, sewer paper, straw (4 inch minimum) or equivalent shall be installed above leach rock prior to backfill of native material.

2.3.9 Pipe Materials and Construction

General Statements**:** Unless otherwise specified, piping shall consist of materials and be constructed in conformance with the standards of this section. All piping shall not be split, streaked, cracked, have foreign inclusions, holes or be defective in any way compromised or damaged. All connection of pipes of different diameters shall be made with a properly constructed reducer.

Building Sewer Pipe**:** The building sewer shall be constructed with materials in conformance to building sewer standards, as identified in the Uniform Plumping Code (UPC). The building sewer pipe shall have a minimum diameter of three (3) inches.

Effluent Sewer Pipe: The effluent sewer materials and construction shall meet the minimum specification for header pipe and fitting. The first five (5) feet of pipe out of the septic tank leading to the first distribution box shall be one of the approved Scheduleforty (40) Acrylonitrile-Butadiene-Styrene (ABS) or Polyvinyl Chloride (PVC) as described below.

Header Pipe and Fittings: Header pipe and fittings shall be a minimum three (3) inch diameter, watertight and one of the following:

1. PVC that meets the most current ASTM Specification D-2241 or D-3034;
2. Schedule forty (40) PVC that meets the most current ASTM D-1785 (for three inch pipe) and D-2672 (for minimum four inch pipe);
3. Schedule forty (40) ABS that meets the most current ASTM Specification D-2468;
4. Other material approved by the Agent.

All pipe and fittings shall be capable of passing a deflection test withstanding three hundred-fifty (350) pounds per foot without cracking or collapsing by using the method described in ASTM 2412. Markings shall meet requirements established in ASTM Specification D-2719, Subsections 9.1.1., 9.1.2 and 9.1.4. A manufacturer of pipe and fittings proposed or requested to be distributed for use in sewage disposal systems within the County shall certify in writing that materials comply with all the requirements of this section, when requested by the Agent. Header pipe shall extend a minimum five (5) feet out of the distribution box.

Distribution Piping: Distribution piping for gravity flow systems shall be a minimum three (3) inches diameter Polyethylene (PE) pipe that meets the most current ASTM Specification F-810, or other material approved by the Agent.

The pipe described above shall have two (2) rows of holes spaced one hundred-twenty (120) degrees apart and sixty (60) degrees on either side of a center line. For distribution pipe, a line of contrasting color shall be provided on the outside of the pipe along the line furthest away and parallel to the two (2) rows of perforations. Markings, consisting of durable ink, shall cover

at least fifty (50) percent of the pipe. Markings may consist of a solid line letters or a combination of the two. Intervals between markings shall not exceed twelve (12) inches. The holes of each row shall not be more than five (5) inches on center and shall have a minimum diameter of one-half (1/2) inch.

Replacement Area: A suitable area to accommodate the installation of one-hundred (100) percent replacement area for an OWTS equivalent to and separate from the initial dispersal system shall be demonstrated as a condition of OWTS permit approval and subdivision parcel approval. Replacement area sizing shall accommodate a system designed appropriately for the soil conditions identified during testing. The area designated for the replacement OWTS shall meet the required horizontal setbacks and remain unencumbered and undisturbed.

2.4 Non-Standard alternative OWTS (NSOWTS)

The use of gravity-flow dispersal fields is not feasible in many areas of the county due to the occurrence of one or more of the following conditions:

1. Soil Percolation rates slower than one hundred-twenty (120) minutes per inch.
2. Seasonal high groundwater within five (5) feet of the dispersal field trench bottom.
3. Least restrictive or impermeable soil layers such as hardpan or cementation etc. within three (3) feet of the dispersal field trench bottom.
4. Rapidly permeable coarse soils with percolation rates faster than five (5) minutes per inch, where groundwater separation requirements are not met.

On certain parcels where site conditions listed above prevent the use of a gravity-flow dispersal field a **Non-Standard OWTS** may be considered if a Qualified Professional can demonstrate that the following minimum requirements are met:

1. Stabilized soil percolation rates are not slower than two-hundred and forty (240) minutes per inch.
2. Seasonal high groundwater is at least twenty-four (24) inches below the dispersal field trench bottom or basal area.
3. Least restrictive soil layers such as hardpan are at least twenty-four (24) inches below the dispersal field trench bottom or basal area.
4. Setbacks described in Appendix E are maintained.
5. Surface and ground water will not be impacted.

Non-standard OWTS normally require the use of a pump chamber, effluent pump and electrical appurtenances to achieve uniform discharge of effluent into a dispersal area. Per 9.2.1 of the LAMP, SCEH will maintain an operating permit and inspection program for NSOWTS. Each

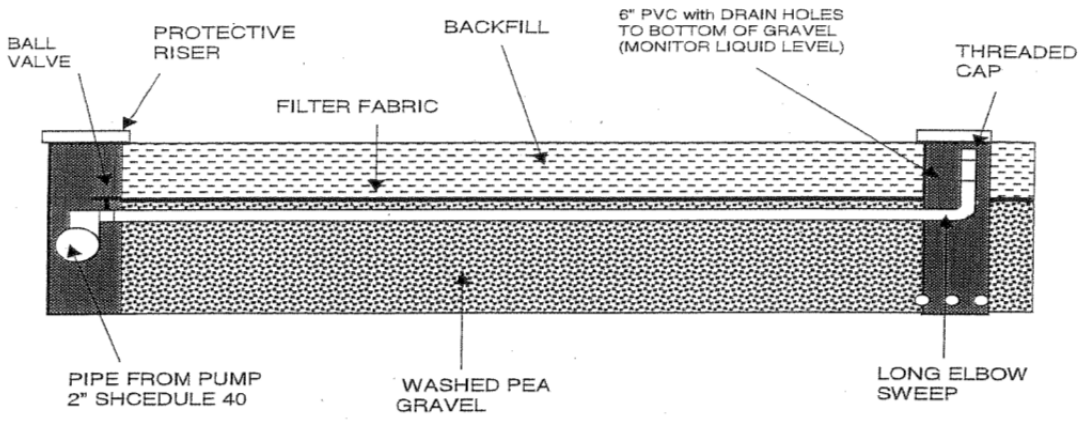
NSOWTS must undergo an inspection once every three years. The inspection must be performed by SCEH or a Qualified Service Provider. Homeowners may conduct their own NSOWTS inspection upon approval by SCEH. For inspection, monitoring, maintenance, and repair of non-standard systems

As detailed in the following sections, the common Non-Standard OWTS used in Siskiyou County include:

1. Pressure Distribution - shallow in-ground trenches with pressurized discharge.
2. Wisconsin Mound - dispersal occurs into an above ground mound of specialized sand.
3. Wisconsin At-Grade - dispersal occurs in a low gravel bed on the ground surface.
4. Supplemental Treatment - wastewater treated to prescribed levels prior to dispersal.

Proposals for non-standard systems other than those listed above may be considered as pilot projects if sufficient information is provided that demonstrates compliance with minimum site conditions as listed in numbers 1-5 above. Proposals shall be under the direction of a Qualified Professional. A qualified service provider may also be required for the ongoing operation and maintenance of the system.

Figure 3 – Typical Pressure Distribution System



2.4.9 Pressure Distribution Systems

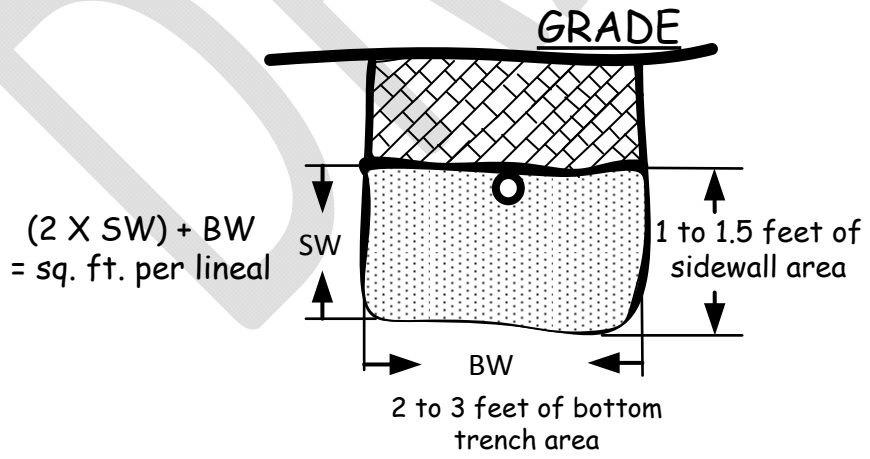
A pressure distribution system may be used if the following criteria can be met:

1. A minimum of twenty-four (24) inches of unsaturated permeable soil exists between the trench bottom and high groundwater.
2. A minimum of twenty-four (24) inches of unsaturated permeable soil exists between the trench bottom and impermeable soil such as hardpan, fractured or consolidated rock, etc.
3. Percolation rates must not be slower than two-hundred and forty (240) minutes per inch.
4. The native ground slope shall not exceed thirty (30) percent.

The design of the Pressure Distribution dispersal field shall be based on both the estimated peak daily flow and soil application rates from the bottom of Table 2, *Pressure Distribution Soil Application Rates.*

The **effective absorption area** credited per **lineal foot** of pressurized dispersal trench shall be calculated by adding the bottom width of the trench to the total height of sidewalls beneath the pressurized pipe; **not to exceed 6 ft.^{2} effective absorption area per lineal foot of trench.**

Figure 4 – Pressure Distribution Trench Section



Example: A 24 inch wide trench with 18 inches of sidewall beneath the pressurized pipe yields 5.0 ft.^{2} of absorption area per lineal foot.

Soil application rates for sizing pressure distribution systems shall be based on percolation testing and/or textural analysis of the most appropriate soil layer encountered below the pressurized dispersal pipe including the twenty-four (24) inch soil column beneath the trench bottom.

A complete design shall include the following information:

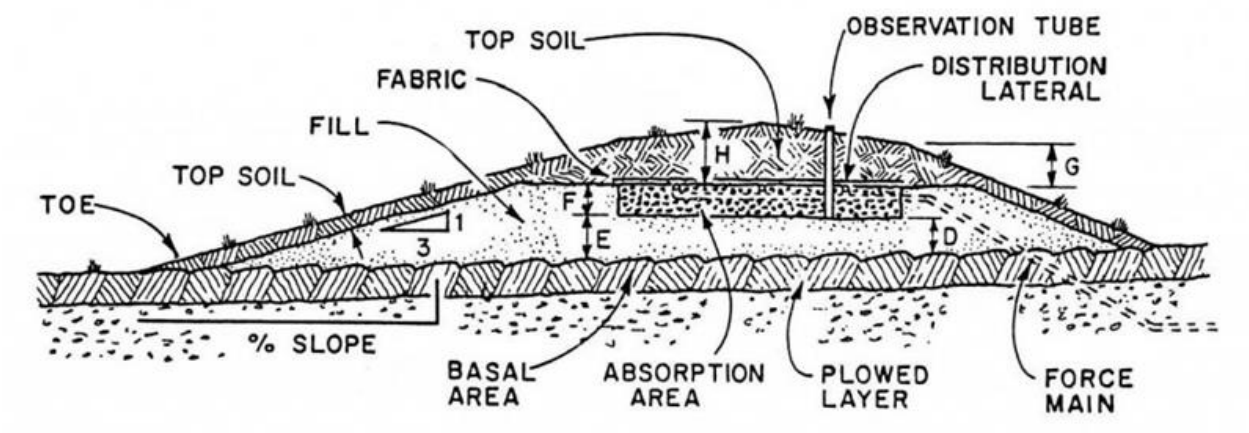
1. A site plan showing the approved location of the dispersal area along with accurate details of all system components
2. The length of laterals and transport lines
3. Pump chamber detail showing float switch locations, elevations etc.
4. Size and type of piping, valves, fittings and lateral access ports
5. A dimensional cross section of the pressurized dispersal trench
6. Pump selection including pump curve
7. Pump control details
8. Location and design of, at least three (3) permanent performance wells of depth equal to the proposed leach trench: (1) centered ten (10) feet upslope of the highest pressure line, (2) centered seventy (75) percent down the leachfield, (3) twenty five (25) feet downslope of the lowest pressure line.
9. Any other information deemed necessary by SCEH.

<u>Pressure Transport Pipe, Pressure Distribution Manifolds, and Pressure Distribution Laterals:</u>

Pressure transport pipe, pressure distribution manifolds, and pressure distribution laterals (piping and fittings), shall meet the most current requirements for schedule forty (40) PVC pressure pipe as identified in ASTM Specifications D-1785, or other material approved by the Agent. All pressure distribution laterals and fittings shall have a minimum diameter of one (1) inch, and all pressure transport and manifold piping shall have a minimum diameter of one and one-half (1-1/2) inches, unless otherwise approved by the Agent.

2.4.10 Wisconsin Mound System

Figure 5 - Typical Mound System



Specifications and design for a Wisconsin Mound shall be based on the Design and Construction Manual for Wisconsin Mounds, Small Scale Wastewater Management Project, University of Wisconsin (January 2000).

General Statement

A mound system is an above-ground dispersal system useful in mitigating some of the limitations associated with inadequate effective soil depth, permeability and depth to groundwater. The mound system consists of a distribution network that under pressure, evenly delivers effluent from a septic tank to a mounded bed of filter material over sand media.

Criteria for Approval

The mound system may be approved only for existing parcels of one (1) acre or larger or for the creation of new parcels equal to or greater than five (5) acres in size. Mound systems may be permitted on sites that meet all of the basic requirements for the installation of a non-conventional system as follows.

Minimum Percolation Test Criteria

1. One (1) to sixty (60) minutes per inch (mpi) for soil groups A-D2 (Table 2).

2. Percolation rate requirements apply to the first twenty-four (24) inches of soil as measured from native grade.
3. Rates less than one (1) mpi are unacceptable.
4. Minimum elevated groundwater level is twenty-four (24) inches from native grade.
5. Minimum depth of suitable permeable soil is twenty-four (24) inches from native grade.
6. The rock content (as retained on the #10 sieve) shall not exceed fifty (50) percent by volume within the first twenty-four (24) inches of soil from native grade.
7. The minimum depth to fractured rock, impermeable soils, such as hardpans and claypans, and consolidated bedrock is twenty-four (24) inches.
8. The minimum setbacks of Mounds Systems to property lines as measured from the edge of the soil cover shall be:
    a) Twenty-five (25) feet laterally
    b) Fifty (50) feet downhill
    c) Fifteen (15) feet uphill

Note: The minimum depth of permeable soil (24 inches) shall extend a minimal horizontal distance of 25 feet downgradient from the edge of the sand perimeter.

Design Criteria

Distribution (Gravel) Bed:

1. Loading rate shall not exceed 1.2 gallons/square foot/day
2. Linear Loading Rate
   a) The linear loading rate for all proposed mound system designs shall be determined.
   b) The proposed system design shall consider the linear loading rate and shall design the width dimensions of the gravel bed accordingly, so that the distribution bed is long and narrow and on the contour.
   c) The linear loading rate shall not exceed four (4) gallons/lineal foot/day.

Configuration:

1. The maximum width of the gravel bed shall be ten (10) feet.
2. The depth of the gravel bed shall be a minimum of nine (9) inches.

Aggregate:

1. Three-eighths (3/8) inch washed pea gravel size to two (2) inch washed drain rock shall be used for the distribution (gravel) bed.
2. The percentage of fines of washed gravel shall not exceed one (1) percent by weight.

Natural Contour:

1. The distribution bed shall follow the natural contour of the ground. The bed must be installed within a tolerance of three (3) inches per one-hundred (100) feet horizontally.
2. Distribution beds shall be angled or curved to meet this requirement.
3. The distribution bed shall not be placed in a concave landscape position.

Sand Fill Area/Absorption Area:

1. The sand fill area shall provide adequate absorption area. The sand area size is based upon the percolation design rate, the daily projected sewage flows, and the sewage application rate as provided in the application rate table 2).
2. On ground slopes greater than one (1) percent, the area uphill from the edge of the gravel distribution bed shall not be included in the calculations for the required absorption area.
3. Areas beyond the longitudinal end of the gravel bed shall not be included in the calculations for the required absorption area for systems exceeding one (1) percent slope.

Configuration:

1. The toe of the sand fill area shall follow the contour, and shall not deviate more than three (3) inches in elevation per one-hundred (100) foot run.
2. The sand fill material shall meet the ASTM C-33 sand specification or Wisconsin mound criteria.
3. The sand fill configuration shall extend a minimum of twenty-four (24) inches level from the edge of the distribution bed on all sides.
4. On slopes greater than two (2) percent, the twenty-four (24) inch dimension mentioned in part 5 above, may be reduced to twelve (12) inches on the uphill side of the distribution bed. Slope correction factors shall be applied as per the Wisconsin Manual (Table 5).

Quality of Soil Cover:

1. The quality of soil cover shall be at least equal to the texture of the topsoil already existing on the site.

Depth of Soil Cover:

1. A minimum of twelve (12) inches in depth over the gravel bed portion of the mound and over the remainder of the sand portion.
2. Mounded to a height of eighteen (18) inches at the midsection of the gravel bed.

Width:

1. The minimum width of soil cover beyond the sand fill area shall be four (4) feet on the distal ends and uphill sides.
2. The width of the soil cover beyond the downhill toe of the sand fill area of the mound shall be a minimum of:
   a) 4 feet ------- 0-2 percent slope
   b) 6 feet ------- 2-4 percent slope
   c) 8 feet ----- --4-6 percent slope
   d) 10 feet ----- 6-8 percent slope
   e) 12 feet ----- 8-12 percent slope

<u>Distribution System</u>

Total Dynamic Head Loss:

1. The total dynamic head loss of the distribution system shall be calculated.
2. Vertical elevation differences.
3. Length of laterals and transport piping.
4. Friction loss of piping, valves, fittings.

5. Head loss shall be referenced as feet of elevation.
6. Hydraulic orifice discharge shall be a five (5) feet +/- two (2) feet.
7. For upward discharge, orifices shall have protective shield.
8. Orifice spacing shall be a maximum of thirty-six (36) inches on center.

Purge Valves:

1. A purge valve shall be located at the end of each distribution lateral.
2. Purge valves shall be protected and encased within a plastic, concrete, or other approved type box to provide easy access and maintenance.
3. The box size shall be of adequate size so as to allow access to the valve and enough room for maintenance of the distribution lateral.
4. Purge valves shall be PVC schedule forty (40) (or higher) gate or ball type valves.

Distribution Laterals:

The number of pressurized distribution laterals shall be based on the width of the gravel bed.

Width of Gravel Bed	No. of Pressurized Lines
3 - 4 feet	1
4 - 6 feet	2
6 - 8 feet	3
8 - 10 feet	4

1. The maximum length of laterals shall be seventy-five (75) feet.
2. The maximum spacing between orifices shall be thirty-six (36) inches.
3. If orifices are directed up they must be protected with a shield.

Monitoring Wells:

A minimum of seven monitoring wells shall be installed within and around the mound system to a depth of twenty-four (24) inches below original grade.

1. Two (2) monitoring wells extending to the bottom of the gravel bed shall be installed within the distribution gravel bed in proportionate locations.
2. Two (2) monitoring wells shall be installed at the downslope toe of the sand fill area of the mound at proportionate locations from the centerline.
3. Two (2) monitoring wells shall be installed twenty-five (25) feet downslope of the toe of the sand fill area of the mound at proportionate locations from centerline.
4. One (1) monitoring well shall be installed ten (10) feet upslope of the toe of the sand fill area of the mound centerline for sloping sites and twenty-five (25) feet upslope for level sites.
5. All monitoring wells shall have concrete or bentonite seals for the upper twelve (12) inches.

Sizing Formulas for Mound Systems

The formulas utilized below are based upon the University of Wisconsin's Sizing Criteria for Mound Disposal Systems. These formulas are used by the Siskiyou County Health Department's Staff. Please refer to Figures 1 and 2 when using these formulas.

Sizing the Absorption Area (Gravel Bed):

1. Infiltration rate for residential systems is 1.2 gallons per square foot/day.
2. Infiltration rate for commercial systems is 1.0 gallons per square foot/day.
3. Daily flow = one-hundred and twenty (120) gallons per day per bedroom= gallons / day
4. Absorption area in square feet required = gal/day divided by the Infiltration rate.

Mound Height:

1. Uphill fill depth = one (1) ft. (This is constant).
2. Downhill fill depth = (D) Uphill fill depth + (percent slope) (trench width).

The downhill fill depth is an approximation because the uphill fill depth must be 1 ft. and the downhill fill depth must be at a height which will make the bed level.

1. Residential systems: Absorption area = 0.75 ft.
2. Commercial systems: Absorption area = 1.0 ft.

Top soil depth = 1.5 ft. minimum over the top of the mound. On flat ground it increases to four (4) ft. at the base.

Mound Length and Width:

Downslope Width = (E + F + 1)(3)(SCF)

SCF = Slope Correction Factor

Upslope Width = (mound depth at upper side of bed) (desired slope; 3 to 1) (slope correction factor)

Upslope Width = (D + F + 1)(3)(SCF)

End Width = $\frac{(D + E + F + H)\ (3)}{2}$

Basal Area:

The basal area is the area of sand under and to both sides of the bed on level sites. On sloping ground only the area under the bed and downslope is considered. The sand at the ends of the bed are not included. The available basal area should be greater than the required basal area which is calculated as follows:

Required Sand Basal Area = Daily flow divided by the Infiltration capacity of the soil

Available Sand Basal Area = (Basal Length) (Width, J + A + I) if on flat ground or (Basal Length) (Width, A + I) if on sloped ground

Downslope and Upslope Width Corrections for Mounds on Sloping Sites

	Downslope (I) Correction Factor	Upslope (J) Correction Factor
0	1.00	1.00
2	1.06	.94
4	1.14	.89
6	1.22	.86
8	1.32	.80
10	1.44	.77
twelve (12)	1.57	.73

2.4.11 At-Grade Systems

Figure 6 – Typical At-Grade System

Cross Section of Wisconsin At-Grade System

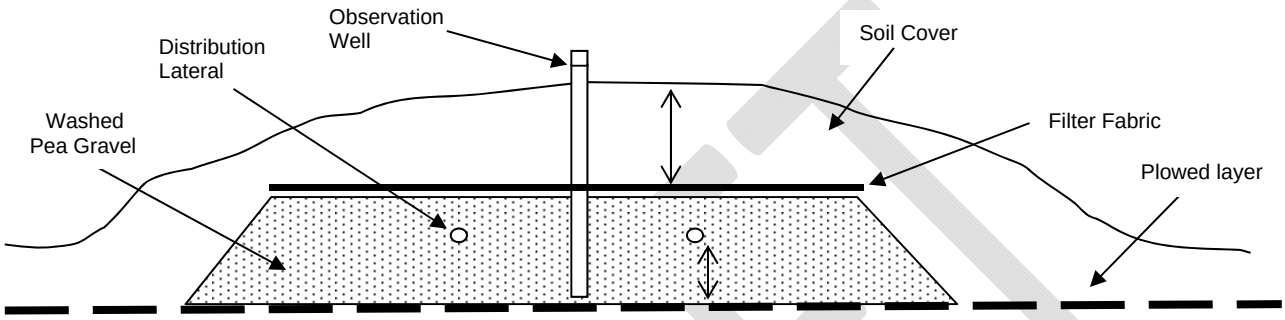


Figure 6 - Typical At-Grade System

Specifications and design for a Wisconsin At-Grade system shall be based on the *Wisconsin At-Grade Soil Absorption System Siting, Design and Construction Manual, Univ. of Wisconsin (January 1990).*

General Statement

At-Grade Systems enable wastewater disposal on sites with conditions of shallow soils, reduced permeability and depth to groundwater below the bottom of the trench. The design shall be based on the Wisconsin At-Grade Soil Absorption System Siting, Design and Construction Manual, Small Scale Wastewater Management Project, University of Wisconsin (January 1990).

Soil and Site Criteria for At-Grade Systems

1. Minimum criteria for percolation tests.
2. Permeable soil is required to a depth of thirty-six (36) inches. Percolation testing done at twelve (12), twenty-four (24), and thirty-six (36) inches must meet the following criteria:
   a) One (1) to sixty (60) mpi for systems from zero (0) to twenty (20) percent slope.
   b) Percolation rates from twelve (12) inches to thirty-six (36) inches or deeper shall be equal to or less than sixty (60) mpi (soil groups A-D1 Table 2)
   c) Rates faster than one (1) mpi are unacceptable.

d) Minimum separation to elevated groundwater levels is thirty-six (36) inches. A separation of twenty-four (24) inches to groundwater as measured from native grade may be used if a sand filter is incorporated into the design of the system.
e) Minimum separation is thirty-six (36) inches from fractured rock, rock exceeding fifty (50) percent by volume, or bedrock as measured from native grade.
f) Minimum setbacks of At-Grade Systems to property lines as measured from the edge of the soil cover:
   (1) Twenty-five (25) feet laterally
   (2) Fifty (50) feet downhill
   (3) Fifteen (15) feet uphill

Note: Additional guidelines can be found in the current edition of Wisconsin At-Grade Soil Absorption System Sites, Design, and Construction Manual.

Design Parameters for At-Grade Systems:

See Requirements for Mound Systems

1. Distribution Beds - Section 2.4.2, except that the distribution bed size is to be based upon the effective soil absorption rate as determined from the application rate table in Section from table 2.
2. Soil Cover - Section 2.4.2
3. Distribution System - Section 2.4.2
4. Monitoring Wells - Section 2.4.2

2.4.12 Supplemental Treatment Systems

Supplemental Treatment is defined in the OWTS policy as "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 effluent into the dispersal field". Supplemental treatment levels for Nitrogen and pathogens shall meet or exceed the criteria in Sections 10.9.1 and 10.10.1 of the State OWTS Policy:

Supplemental Treatment Requirements for Nitrogen

10.9.1 Effluent from the supplemental treatment components designed to reduce nitrogen shall be certified by National Sanitation Foundation (NSF), or other third party tester, to meet a fifty (50) percent reduction in total nitrogen when comparing the thirty (30) day average influent to the thirty (30) day average effluent.

Supplemental Treatment Requirements for Pathogens.

10.10.1 Supplemental treatment components designed to perform disinfection shall provide sufficient pretreatment of the wastewater so that effluent from the supplemental treatment components does not exceed a thirty (30) day average Total Suspended Solids of thirty (30) mg/l and shall further achieve an effluent fecal coliform concentration less than or equal to two-hundred (200) Most Probable Number (MPN) per one hundred (100) milliliters.

Supplemental Systems - General Provisions

An alternative supplemental system is any Agent-approved on-site sewage disposal system that is not a conventional system.

Unless otherwise indicated in a specific alternative system section or by the Agent, all provisions pertaining to the site evaluation criteria, design (including size), construction, and maintenance of standard systems shall apply to supplemental treatment systems.

Supplemental systems shall not be used in lieu of a conventional system when an adequate area within the boundaries of the parcel can meet the requirements for installation of a conventional system.

A Supplemental Treatment system may be considered and/or required under the following conditions:

1. Limited existing area for both a primary and replacement septic system. A fifty (50) percent reduction in nitrates, through supplemental treatment as certified by a Qualified Professional (QP), can potentially require 50percent less area needed for new parcel development or replacement dispersal fields.
2. New construction, repair or replacement OWTS on parcels where unfavorable site conditions necessitate a level of treatment greater than a standard (gravity) OWTS or other non-standard OWTS can provide.
3. New construction, repair, or replacement OWTS on parcels with unfavorable site conditions where the surrounding environment requires enhanced protection.

Any supplemental treatment system proposed for use must have undergone testing and certification from a recognized independent third party such as NSF. Any supplemental treatment system proposed shall be listed by testing organization and treatment standards. Listing standards include but are not limited to:

1. *NSF Standard 40 – Residential: Onsite Systems*
2. *NSF Standard 245 – Nitrogen Reduction*
3. *NSF Standard 46 – Components and Devices*

The target treatment criteria for a specific supplemental treatment system (bacteria, nitrogen or both) will depend on site specific conditions.

Any application for a supplemental treatment system must be prepared by a Qualified Professional competent in the design of such systems.

All supplemental treatment systems require regular service and maintenance by a Qualified Service Provider. The OWTS system design must propose an appropriate ongoing monitoring schedule for the system. The permit, with the design approved by SCEH will include the approved monitoring schedule. Prior to SCEH issuing construction approval, a copy of a signed maintenance contract with a Qualified Service Provider to perform the required maintenance and monitoring for a duration of, at least, three (3) years must be provided.

Periodic inspection of installed systems

Periodic inspections of installed alternative systems shall be performed by the Agent. The property owner shall record a notice on the property deed authorizing periodic inspections of installed alternative systems by the Agent and/or the Regional Water Quality Control Board prior to the issuance of a disposal permit. Easement agreements may not be removed from the title of the property unless authorized in writing by the Agent. An inspection fee may be charged.

A report of each inspection shall be prepared by the Agent. The report shall list system deficiencies and a correction report shall be provided promptly to the system owner. Necessary follow-up inspections shall be scheduled.

Unless otherwise indicated in a specific section of this ordinance, all alternative systems shall be designed and installed under the supervision, inspection, and approval of a Qualified Professional. All installation inspections of alternative system shall be jointly conducted by the Qualified Professional and the Agent. The Qualified Professional shall submit written certification that the system has been installed in accordance with the approved construction/design plan and permit conditions. The Agent shall not finalize any system installation until certification of the installation is received from the QP and the owner is provided with a maintenance manual from the Qualified Professional which outlines the operation of the system, including the owner's responsibilities for maintaining the system.

Alternative systems approved for the creation of parcels and additional accessory buildings shall demonstrate a minimum useable area in accordance with section 2.4. The minimum parcel size for the creation of parcels approved for an alternative supplemental treatment system shall be five (5) acres.

The ends of all distribution laterals shall incorporate a purge valve assembly. Valves shall be protected and enclosed within a valve box of a size to allow easy access and maintenance of the distribution lateral. Purge valves shall be PVC schedule forty (40) (or higher) gate or ball type valves.

Inspection wells, designed and constructed shall be incorporated into the design of all alternative systems. The locations of inspection wells are specific to the type of design proposed. The Siskiyou County Health Department may occasionally sample inspection wells for total coliform bacteria, fecal bacteria, total dissolved solids, biological oxygen demand (BOD) and nitrates as indicators of the degree of sewage treatment and performance of alternative systems.

An application for a permit shall be made in accordance with the procedure and requirements of SCC Section 5-2.10 and include the following additional information for indicated systems, as well as all other information required by the Agent:

1. Pressure Distribution - the septic and/or dosing tank specifications, including tank risers, liquid levels, dosing volumes, pump specifications, control panel specifications, and a cross-sectional diagram of the components of the septic tank and/or dosing tank. A schematic of the disposal field indicating pressure distribution lateral size and spacing; the diameter of an orifice; the hydraulic calculations for pump sizing and residual head pressure; a schematic of the manifold assembly and purge valve detail.
2. Sand Filter Design - all of the information required for a pressure distribution system; a schematic and cross-sectional diagram of the sand filter, including depths of filter mediums; lateral distribution size and spacing, orifice diameter and hole spacing, hydraulic calculations for pump sizing and residual head pressure; schematic of the manifold assembly, purge valve detail, and under drain piping with in the sand filter.
3. Mound Systems - a schematic and cross-sectional diagrams of the mound system, including depth, width and length of the filter bed, sand fill area and cover material; transport, manifold and lateral distribution piping size; orifice diameter and spacing; hydraulic calculations for pump sizing and residual head pressure; purge valve detail; and monitor well locations and design.
4. At-Grade Systems - all that is required for a mound system.
5. Aerobic/Supplemental Treatment Systems - manufacturers schematic of the system; documentation the system meets or exceeds the National Sanitation.

2.4.5 Experimental system requirements

General Statement

Innovative technologies to standard and alternative systems are expected. It is the policy of the Agent to pursue a program of experimentation for the purpose of obtaining sufficient data for the development of alternative systems, which may benefit significant numbers of people within Siskiyou County.

Criteria for Approval

Sites may be considered for experimental system permits where:

1. Soils, climate, groundwater, or topographical conditions appear to be supportive of a properly functioning system, and consideration of a particular system may benefit large numbers of people;
2. A specific alternative system, acceptable to the Agent, is available in the event of system failure;
3. A single-family dwelling shall be served;
4. The system shall be used on a continuous basis during the life of the test project;
5. Resources for monitoring, sample collection, and laboratory testing are available;
6. The property owner records with the Siskiyou County recorder=s office, a notice of restrictive covenant which notifies prospective property purchasers of the existence of an experimental system. Included in this restrictive covenant, the applicant shall state that:
   a) The owner agrees, to hold the County of Siskiyou, its officers and employees harmless of any and all loss and damage caused by defective installation or operation of proposed system,
   b) in the event of a non-repairable failure or if the system is in any other way functioning unsatisfactorily, the applicant shall:
      i) Replace the experimental system with an approved alternative or conventional system, as specified,
      ii) Hook up to sewer, or
      iii) Abandon the system.
   c) A statement granting the Agent=s legal and physical entry to the property for purposes inspection, monitoring and necessary enforcement action.
7. The parcel size is at least one (1) acre in size;
8. Zoning and planning requirements allow system installation;
9. The California Regional Water Quality Control Board approves the use of the proposed experimental system; and
10. The responsibility of ownership, operation, maintenance and monitoring can be assured.

Permitting Required

Without first obtaining a permit from the Agent, no person shall construct an experimental on-site sewage treatment and disposal system.

1. Preliminary Project Review
   A proposal shall be submitted to the Agent with an application provided by the Agent and the appropriate Fee attached. The proposal shall include at minimum:
   a) A description of the hypothesis or intended objective.
   b) The supportive theory and/or applied research that suggests the hypothesis or intended objective is realistic and reasonable and has technical merit. The research should be scientifically valid, including having controls, and prove or support the theory. This information should be confined mainly to technical aspects and should include background information, engineering data, performance results, and field data. Supporting data should include performance results, and field data. Supporting data should include performance information concerning microbiological and chemical effluent constituents. Properly documented testing results from regulatory agencies are generally acceptable unless there are refuting facts.

2. Permit Application Procedure
   Application for experimental system permits shall be made on forms approved by the Agent. The application shall be complete, signed by the owner or owner's authorized agent and accompanied by the required fee.
   a) Construction/Design Plan - The Agent shall require the applicant to secure the services of qualified Registered Civil Engineer to design the system, and certify its installation**.**
      i) Specify method and manner of system installation, operation, and maintenance.
      ii) Specify method, manner, and duration of system testing and monitoring.
      iii) Identify when and where system is to be inspected.
      iv) Specify testing, observation and monitoring to be done that speaks to the hypothesis or intended objective., e.g., methodology, parameters, frequency, duration.
      v) Specify material and construction specifications.
      vi) Provide all other construction and design information requested by the Agent.
3. Permit Conditions
   a) Permits are non-transferable.
   b) Permits are valid for a period of one (1) year after of issuance.
   c)The system construction shall conform to an approved construction/design plan and permit specifications.

4. Prohibitions
   a) Experimental systems shall not be used for the creation of new lots and parcels.
   b) Direct discharge to ground surface or groundwater is prohibited by Section 5-2.030(3), and therefore is not be allowed.

5. Inspection of Installed System
   a) Upon completing construction for each inspection phase required under the permit and approved construction/design, the permit holder shall notify the Agent and the project engineer.

b) The Agent and the project engineer shall inspect construction to determine whether it complies with permit conditions and requirements.
c) After system installation is complete and complies with this ordinance and permit conditions, a written statement from the project engineer shall be submitted to the Department acknowledging the system was installed as per the system design.

6. Repair or Replacement of the System
   If the Agent finds the operation of the system is unsatisfactory, the owner upon written notification shall promptly apply for a permit to repair, modify, or replace the system. The repair shall be made consistent with the specific statements of the restrictive covenant in this matter.

7. System Monitoring
   The system shall be monitored by the Agent in accordance with a schedule contained in the permit and construction design plan and shall speak to the intended objective. All costs for monitoring and reporting shall be the responsibility of the applicant/owner.

2.5 Intercept Drains (Curtain Drain)

Intercept drains are gravel filled trenches with perforated pipe installed up gradient from the dispersal field area for the purpose of intercepting, diverting, and discharging perched groundwater away from the dispersal field. The use of an intercept drain may be proposed in conjunction with a site specific OWTS design requiring perched groundwater to be diverted.

The use of an intercept drain to divert perched groundwater for the purpose of establishing a dispersal field will be considered when all of the following criteria can be met:

1. Drains shall meet the minimum setback requirements to disposal area and replacement area and septic tank as indicated in Appendix E.
2. The discharge pipe and drainage trench pipe are integral parts of the system, but do not need to meet setback requirements to property lines, streams, lakes, ponds or other surface water bodies.
3. All other requirements for system approval, except depth to groundwater, can be met. However, after the drain is installed, the groundwater levels shall conform to the requirements for vertical separation to groundwater for the proposed system.
4. The Agent has the discretion of requiring demonstration that a proposed site can be drained prior to issuing a sewage disposal construction permit. Wet Weather Testing (if applicable) or general site testing of the drained site is necessary to determine if the subsurface drain adequately lowered groundwater elevations in conformance with 2.3.7 RTM.
5. The site has a natural outlet that will allow a drain installed on a proper grade around the proposed system to daylight.
6. Subsurface drains shall meet all other design criteria.
7. The site has a natural ground slope of five (5) percent or greater.
8. The site evaluation shows groundwater to be perched on bedrock, hardpan, or an impermeable soil layer.
9. The intercepting drain extends from ground surface into bedrock, hardpan, or impermeable soil layer.

10. The pervious section of an intercept drain must be a minimum of fifteen (15) feet up-gradient and a minimum of fifty (50) feet laterally from a leach field. Design, construction, and materials requirements for subsurface drains (see Appendix D.5).
11. Filter fabric or other approved materials shall be placed as one continuous piece on the up gradient side and top of all soil-filter material interfaces of the drainage trench. The down gradient side and the bottom of the drainage trench shall be fitted with an impervious material between the soil-filter material interface and installed so as to minimize the number of overlapping seams.
12. The subsurface drain shall be filled with filter material. A minimum twelve (twelve (12)) inches of soil cover shall be placed over the gravel of each trench.
13. A four (4) inch minimum Polyvinyl Chloride (PVC) or Polyethylene (PE) drainage pipe shall be laid the entire length of the trench with two (2) inches of gravel underneath the pipe.
14. The drainage trench shall be situated so that captured water drains by gravity flow out of outlet pipes. Trench bottoms shall maintain a one (1) percent slope at outlets. The outlet end shall be protected by a short section of Schedule 80 Polyvinyl Chloride (PVC) or Acrylonitrile-Butadiene-Styrene (ABS) **,** or metal pipe, and a flap gate or grill to exclude rodents.
15. The drainage trench shall be a minimum of twelve (twelve (12)) inches wide and shall extend from ground surface ending within the limiting layer.
16. The drainage trench shall be installed up slope of the disposal area for which it is to serve.

2.6 Design Submittal

A completed Sewage Disposal Permit signed by the property owner or Authorized Agent is required for all applications, and shall include the following elements:

1. Project description explaining the intended use or uses of the property; indicate the number of dwelling units and total number of bedrooms. If a nonresidential use is proposed, wastewater flows prepared by a Qualified Professional and the method used to arrive at the estimate shall be provided.
2. General description of the waste stream; indicate if the system will be serving a single-family residence, multiple structures, commercial or industrial uses.
3. Project location providing detailed directions with map and instructions to the property.
4. A scaled map of the lot showing: appropriate landmarks; steep slopes; roads; surveyor's landmarks; lot dimensions; existing and proposed easements for road or utility purposes; wells, water bodies or drainage swales; and existing, proposed, or abandoned onsite wastewater treatment systems.
5. A scaled site plan or detail of the proposed OWTS showing the approved septic area, the average cross slope, structures served, roads, and parking areas and all significant site features.
6. A written summary of the site evaluation results and all soils testing (profile description, percolation testing, and groundwater data) with findings presented in a legible format.
7. Explanation of proposed OWTS Design.
8. Complete OWTS design calculations and detailed schematic drawings with specifications for all OWTS Components shall be provided.
9. Design submittals to permit an OWTS previously installed without a permit shall also include details of the installed system including the size and condition of the septic tank; length, depth, spacing, and type of dispersal trenches; determination of adequate sizing; and recommendations for modifications necessary to meet the requirements of these regulations.

Part 3 - Permitting

Permits are required for the installation of all OWTS in Siskiyou County per (SCC) Section 5 Chapter 2.09.

(a) "Permit Required". No work shall be commenced on any private sewage disposal system until a permit to do such work shall have first been obtained from the Health Officer.
(b) A separate permit shall be obtained for each private sewage disposal system.

Application forms and current fee sheets can be provided upon request in hard copy or electronic format, are available at the SCEH office, and can be found online at http://www.co.siskiyou.ca.us/content/environmental-health-division-land-use.

Sewage disposal permits are valid for one year from the date of the issuance If the work has not been completed within that time, the applicant may request an extension to the district REHS. Such request must state how much additional time is needed to complete the work.

3.1 New Construction

Applications for an Onsite Sewage Disposal Evaluation can be found on the Siskiyou County Environmental Health Website or at the Siskiyou County Environmental Health Division at located at 806 South Main Street, Yreka, CA 96097. Applicants have two options:

1. The first option allows the applicant to have SCEH staff meet onsite with a backhoe (provided by the applicant) to conduct an "On-Site Evaluation". The Onsite Evaluation for Sewage Disposal Application must be submitted prior to SCEH meeting onsite. If there are sufficient depths of well drained Zone 2 soils found in the backhoe excavations, SCEH staff can complete the approve the site for conventional onsite sewage disposal without further evaluation, provided all other siting criteria are met. If type 2 soils are not encountered, then the District Environmental Health Specialist will provide appropriate direction as to the next step required in the process (usually percolation testing, etc.).
2. The second option requires the applicant to provide an Alternative OWTS design proposal based on a site evaluation conducted by a Qualified Professional. The site evaluation and OWTS design proposal must be submitted when applying for an OWTS permit.

Note: If backhoe excavations reveal Type 3 or 4 soils (clay) and/or indications of high seasonal groundwater, the applicant must complete wet weather testing as described in Part 1; Section 1.2 of this document.

Request for sewage disposal permits will be forwarded to the district REHS for review. When the permit is approved, it will be issued to the property owner or their Authorized Representative. In cases where SCEH is unable to issue a permit, the applicant will be provided a written explanation for the permit denial.

3.2 Repair Permit

Minor repairs of existing OWTS do not require a permit in Siskiyou County. Minor repairs do not allow for the placement of any type of new septic tank or the addition or alteration of the existing drain fields.

3.3 OWTS Installed Without Permit

1. Property owners that have an OWTS that was installed without a permit will be charged twice the permit fee if the system is found to meet all current requirements.
2. SCEH will schedule a site inspection and the property owner will be asked to expose portions of the system including but not limited to the septic tank, distribution box and ends of dispersal field lines. If the system utilizes a pump, the pump chamber will need to be exposed.
3. SCEH shall inspect the site to determine if the system installation is adequate and if it complies with the minimum siting and design requirements. If the system is found to be adequate for its intended use the SCEH will issue a permit for the system.
4. If an OWTS installation or the site conditions do not meet siting and design requirements, SCEH shall provide the applicant with written notification of the deficiencies found and corrective measures needed to obtain approval.

3.4 Structure Remodel, Replacement, or Change in Use

The use of an existing OWTS for new or remodeling construction or changes in use, will be acceptable if it can demonstrated with acceptable documentation or site inspections that the OWTS septic tank and dispersal field are sized appropriately and functioning properly for the expected daily wastewater discharge of the proposed project, and a 100 percent reserve dispersal field area that meets current standards is available. Remodeling construction which will not increase the daily wastewater discharge or impact the availability of a 100 percent reserve dispersal field area can be approved with the existing Tier 0 OWTS provided there are no detectable signs of system failure.

SCEH determinations will be made in accordance with the *Siskiyou County OWTS RTM.* SCEH agent must be able to determine the following:

1. Soil testing and groundwater elevation information as described in Part 1 of this document is available for the existing OWTS and designated reserve area;
2. The existing OWTS is sized and installed appropriately to support the proposed project;
3. Reserve area is not impacted by the proposed project;
4. The existing OWTS is functioning properly with no evidence of failure.

If the project has the potential to increase the wastewater flows the existing OWTS, the owner will need to bring the system up to current standard.

3.4 Septic Cesspool, Tank or Seepage Pit Destruction/Abandonment

Abandoned septic tanks shall be destroyed in accordance with SCC 5-2.32.

(a) Every abandoned building sewer or part thereof shall be plugged or capped in an approved manner within five feet (5') of the property line.

(b) Every abandoned cesspool, septic tank or Seepage pit which has been abandoned, or has been discontinued otherwise from further use, or to which waste or soil pipe from plumbing fixture is connected shall have the sewage removed therefrom and be completely filled with earth, sand, gravel, concrete, or other approved material. The cover of the septic tank shall be removed before filling. The filling shall not

extend above the top of the vertical portions of the sidewalls or above the level of any outlet pipe until an inspection has been completed by the Health Officer. After such inspection the septic tank shall be filled to the level of the top of the ground.

(c) No person owning or controlling any septic tank shall fail, refuse, or neglect to comply with the provisions of this section upon receipt of notice from the Health Officer.

(d) Where an OWTS is abandoned consequent to connecting with a public sewer, the property owner or his/her authorized representative making the connection shall fill the abandoned septic tank as required by the Health Officer within thirty (30) days from the time of connecting to the public sewer.

3.5 Grease Interceptors

All structures served by an OWTS that produce wastewater containing oil, wax, fats or grease shall utilize an approved grease interceptor. Plumbing fixtures having the potential to receive fats, oils, wax, and/or grease shall be connected to the grease interceptor. These include, but are not limited to:

1. Three compartment sinks
2. Floor sinks
3. Mop sinks
4. Some dishwashing machines

Toilets, urinals, showers, and similar fixtures shall not discharge through an interceptor.

Any facility served by an OWTS, except those serving drinks and/or prepackaged food only, must demonstrate to the satisfaction of SCEH that an adequate grease interceptor is in use prior to approval of an operating permit and/or business license.

For new construction, the grease interceptor shall be permitted as a component of the OWTS in accordance with the procedure outlined in section 3.1

3.6 Additional Considerations

3.6.1 Holding Tanks

The use of holding tanks is prohibited per SCC 5-2.15 except where SCEH determines that:

1. It is necessary as a temporary means to abate an existing nuisance or health hazard; or
2. It is for transient use at a campground or similar public facility where use of a permanent OWTS is not feasible and maintenance is performed by a public agency or similar entity.
3. It falls within the Special Area of Medicine Lake Basin variance area.

3.6.2 Cumulative Effects

The potential cumulative effects on ground and surface waters from OWTS usage include, but are not limited to, groundwater mounding and nitrate loading. The need for a cumulative impacts study will be considered for development served by OWTS when one or more of the following situations occur:

1. The anticipated daily flow exceeds density standard policy (#429) gallons.
2. Wastewater strength exceeds that of domestic wastewater.
3. OWTS is located in an area where site conditions increase potential for contamination.
4. Other situations as deemed necessary.

Groundwater Mounding Analysis

Groundwater mounding analysis shall be used to predict the highest rise of the water table and shall account for background groundwater conditions during the wet weather season. The maximum acceptable rise of the water table for short periods of time during the wet season, as established from groundwater mounding analysis, shall be as follows:

- For systems with design flows of less than 1,200 gallons per day, groundwater mounding beneath the dispersal field shall not result in more than a 50 percent reduction in the minimum depth to seasonally high groundwater as specified in these regulations.
- For systems with design flows exceeding 1,200 gallons per day, a minimum groundwater clearance of 24 inches shall be maintained beneath the dispersal field trench bottom.

Nitrate Loading

Analysis of nitrate loading effects shall be based, at a minimum, on an estimate of annual chemical-water mass balance. Minimum values used for the total nitrogen concentration of septic tank effluent shall be: 40 mg/l as N (for average flow conditions) for residential wastewater, or as determined from sampling comparable systems or from acceptable scientific literature. OWTS shall not cause the groundwater nitrate concentration to exceed 10.0 mg/l as N at any source of drinking water on the property nor on any potential off-site drinking water source.

3.6.3 Variance Policy

If a proposed design cannot meet any standard contained in the Siskiyou County OWTS Regulations and Technical Manual or applicable state policy, the application must identify the unmet standard. For SCEH to consider a variance to any standard, the applicant must submit an OWTS Variance Application and the required fee. Variances may be granted when the applicant can demonstrate that water quality will not be impaired and public health will not be impacted as a result of the variance.

3.6.4 Limitations

The following conditions are regulated by the RWQCB. Owners must notify the RWQCB via submittal of a Report of Waste Discharge, Form 200, available from the RWQCB.

1. A new or replacement OWTS that does not meet the conditions and requirements set forth in these regulations;
2. Any OWTS, not under individual waste discharge requirements or a waiver of individual waste discharge requirements issued by a Regional Water Board, with the projected flow of over 10,000 gallons-per-day;
3. Any OWTS that receives high-strength wastewater, unless the waste stream is from a commercial food service building;

4. Any OWTS that receives high-strength wastewater from a commercial food service building: (1) with a BOD higher than 900 mg/L, or (2) that does not have a properly sized and functioning oil/grease interceptor.

Part 4 - Construction and Installation

4.1 General Installation Requirements

1. Only a Qualified Professional shall design Onsite Wastewater Treatment Systems (OWTS) including the expansion of existing dispersal systems. A Qualified Professional employed by a local agency, while acting in that capacity may design and/or review for approval and permitting a design for a proposed OWTS.
2. A Licensed General Engineering Contractor (Class A), General Building Contractor (Class B), Sanitation System Contractor (Specialty Class C-42), or Plumbing Contractor (Specialty Class C-36) is qualified to install all new OWTS or 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. A property owner may also install his/her own OWTS under the approval of SCEH with the provision that the components remain exposed for inspection and approval by SCEH.
3. OWTS shall be installed in accordance with the design plans approved and permitted by SCEH. Any proposed changes to approved plans must be reviewed and approved by SCEH.
4. All wastewater from each building or structure shall be discharged into an approved OWTS or approved graywater system (Appendix F), where applicable.
5. No OWTS, or part thereof, shall be located on any lot other than the lot which is the site of the building or structure served by such system.
6. No rain, surface, or subsurface water shall be connected to or discharged into any OWTS.
7. The OWTS shall start at a point of approximately two (2) feet from the foundation (cleanout) of a building or outside wall of a mobile home. The septic tank shall be a minimum of five (5) feet from any building foundation and the drain fields shall be a minimum of eight (8) feet from any portion of the foundation.
8. OWTS shall not be permitted under walkways, driveways, parking lots, roadways, or areas of compacted surfaces. All dispersal systems (leach fields) shall be covered with at least twelve (12) inches of non-compacted soil.

4.2 Building Sewer Requirements

1. Type and size of building sewers used in OWTS shall be in accordance with the most recent revision of the California Uniform Plumbing Code, as adopted by the County of Siskiyou.
2. Building sewers shall be run in practical alignment and at a uniform slope of not less than one-fourth (1/4) inch per foot toward the point of disposal. Where it is impractical, due to the depth of the street sewer or to the arrangement of any building or structure, to obtain a slope of one-fourth (1/4) inch per foot, a slope of not less than one- eighth (1/8) inch per foot may be approved by SCEH if the building sewer is at least four (4) inches in diameter.
3. Building sewer piping shall be laid on a firm bed throughout its entire length. Any such piping placed on fill shall be laid on a bed of approved materials and shall be adequately supported to the satisfaction of SCEH.
4. There shall be a minimum of twelve (twelve (12)) inches of earth fill over all building sewers.
5. Cleanouts shall be placed in every building sewer at the junction with the building drain and at intervals not to exceed one hundred (100) feet in straight runs. Every change in alignment or grade in excess of twenty-two and one-half (22 ½) degrees in a building sewer shall be served by a cleanout.
6. Each cleanout shall be installed with a double sweep configuration to allow for snaking in both up flow and down flow directions and vertically above the flow of the pipe.

7. Cleanouts installed under concrete or asphalt paving shall be made accessible and shall be adequately protected.
8. Approved manholes may be installed in lieu of cleanouts if approved by SCEH.
9. Gravity building sewers constructed of materials approved for use within a building may be located within the same trench as a private water line as long as the water line is installed above all sewer lines. Existing sewer lines constructed of materials not approved for use within a building must maintain a one (1) foot vertical and one (1) foot horizontal separation to all water lines.
10. Pressure sewer lines shall be installed in a separate trench at least one (1) foot horizontally from the water line trench.

4.3 Septic Tank Requirements

General Statement

The requirements of this section shall apply to all septic tanks manufactured for use in Siskiyou County unless specifically exempted by other portions of this ordinance (Diagram 10).

Materials

Septic tanks shall be precast reinforced concrete, polyethylene, fiberglass or other material approved by the Agent. Wood tanks and Metal tanks are prohibited.

Note: Cast-in-place septic systems may be considered for large systems on a case-by-case basis. These septic tank designs shall be reviewed and approved by the Agent prior to installation and use within Siskiyou County.

Tank Construction/Design Specification

1. Precast concrete tanks shall have a minimum wall, compartment and bottom thickness of two and one-half (2-1/2) inches, and shall be adequately reinforced. The top shall be at least four (4) inches thick.
2. Septic tanks shall have a minimum of two compartments. Installation of multiple single compartment tanks in a series is not acceptable, unless approved by Agent prior to installation. The first compartment shall have a minimum liquid capacity of at least two-thirds (2/3) of the total required liquid capacity, as measured form the invert of the outlet fitting. The second compartment shall have a minimum liquid capacity equal to or greater than one-half (1/2) of the liquid capacity of the first compartment.
3. Each compartment shall have access provided by a manhole having not less than eighteen (18) inches across its shortest dimension unless otherwise approved by the Agent.
4. Each septic tank compartment shall be provided with a watertight riser, extending to the ground surface or above, with a minimum inside horizontal measurement equal to or greater than the access manhole. The riser-tank top joint shall be properly sealed with a sealant and/or an interlocking mechanism so as to be water tight. Cement grout sealing alone is not an acceptable method of sealing this joint. Surface water shall be diverted away from the riser cover by creating a sloping surface away from the riser, or extending the riser three (3) inches above ground surface. The cover shall be securely fastened with an appropriate mechanism to make the riser vandal, tamper, and child resistant. Acceptable protection of openings shall be watertight and may include, but are not limited to:
   a) An O ring with twist lock covers requiring special tools for removal,
   b) Covers weighing seventy-five (75) pounds or more, or
   c) Stainless steel or other corrosion resistant screws for fiberglass lids.

Note: No cover shall exceed seventy-five (75) pounds.

5. No compartment shall have an inside horizontal dimension of less than twenty-four (24) inches.
6. Septic tanks shall be watertight.
7. Septic tanks shall be capable of supporting an earth load of at least three hundred (300) pounds per square foot when the maximum coverage does not exceed three (3) feet. Tanks installed with more than three (3) feet of cover shall be reinforced to support the additional load. Tanks installed beneath paved surfaces subject to vehicular traffic (e.g., driveways and vehicle turnarounds) shall be engineered to support the additional load.
8. At least ten (10) percent of the inside volume of the tank shall be above liquid level to provide scum storage.

Size

1. The minimum liquid capacity for any septic tank shall be one thousand (750) gallons. For further specific design criteria, see Septic Tank Sizing Table 1
2. The liquid depth of any compartment shall be at least forty (40) inches

Fittings

1. The inlet fittings shall be of Schedule 40 ABS, outlet fittings shall be of Schedule 40 PVC, Schedule 40 ABS or other materials approved by the Agent, with a minimum diameter of three (3) inches.
2. The distance between the inlet and outlet fitting shall be equal to, or greater than, the liquid depth of the tank.
3. Unless otherwise approved by the Agent, the inlet and outlet fittings shall be located at opposite ends of the tank. All fittings shall be attached in a watertight manner by the use of a cast in place grommet of an approved material so as to form a water tight seal with the inlet and outlet fittings.
4. The inlet fitting shall be a sanitary tee with a minimum pipe diameter of not less than the connecting building sewer nor less than three (3) inches extending at least four (4) inches above and eighteen (18) inches below the liquid level. The diameter of the vertical leg extending below liquid level shall not be less in size than the building sewer nor less than four (4) inches.
5. The outlet fitting shall be a sanitary tee with a minimum pipe diameter of not less than the connecting effluent sewer pipe nor less than three (3) inches. The outlet fitting shall extend at least four (4) inches above liquid level, and below liquid level a distance of eighteen (18) inches. The diameter of the vertical leg extending below the liquid level shall not be less in size than the effluent sewer pipe nor less than four (4) inches.
6. Ventilation shall be provided through the fittings by means of a one (1) inch minimum space between the underside of the top of the tank and the top of the Tee fitting.
7. The invert of the inlet fitting shall be at a level not less than two (2) inches above the invert of the outlet fitting.
8. Sanitary tees shall be accessible through manhole access riser.
9. An approved effluent filter is recommended to be provided as either a component of the sanitary outlet tee or in lieu of the outlet tee provided it meets the design intent of a sanitary tee. Installed effluent filters shall be designed to prevent solids in excess of three-sixteenths (3/16) of an inch diameter from passing to the dispersal system. Septic tanks that use a National Sanitation Foundation/American National Standard Institute (NSF/ANSI) Standard 46 effluent filter shall be deemed in compliance with this recommendation..

Baffle

A minimum four (4) inch diameter tee fitting or baffle slot (with the same opening area as fitting) shall be placed in the common compartment wall, using the same materials specifications as required for the inlet fitting. The invert of the Tee fitting or baffle slot shall be located approximately at fifty (50) percent of the liquid depth. A minimum two inch vent shall be between the top of the compartment wall and the top of the tank. The common compartment wall shall be of common material and extend a minimum of four (4) inches above liquid level.

Tank Documentation

For initial use of a manufacture's tank design proposed for use in Siskiyou County, or when a revised tank design is proposed for same, each commercial manufacturer of prefabricated septic tanks shall provide the Agent with written documentation that the septic tank design, materials and construction shall comply with all requirements of this ordinance. The Agent shall require an initial set of plans and specification prepared by a California Registered Civil Engineer, for each tank design and a set reflecting any subsequent revisions. Plans shall show at minimum: dimensions, reinforcing, structural calculations, and materials specifications. The Agent may make periodic manufacturers facility inspection to verify construction compliance with this ordinance and submitted plans.

4.4 Grease Interceptors

1. Grease interceptors shall be sized in accordance with the most current version of the California Plumbing Code, but shall not be less than 750 gallon capacity.
2. Grease interceptors shall be constructed and installed in accordance with Section 4.3 – Septic Tank Requirements except that the sanitary tees shall extend to a depth of twelve (12) inches above the bottom of the tank. Effluent filters are not required.
3. All interceptors shall have risers installed over each access port.
4. Interceptors shall be located outside the structure and as close as possible to the fixtures served.
5. Grease interceptors shall be cleaned regularly to ensure proper operation. Cleaning shall be performed by a qualified grease pumper possessing applicable licenses and permits as issued by the State of California and the County of Siskiyou.

4.5 Pump Tank, Pump, and Control Requirements

1. The pump tank shall be single chamber, pre-cast concrete, and shall have the floors and walls of the tank monolithically poured. Other tanks may be approved for use if they can demonstrate current IAPMO approval listing.
2. The pump tank shall have a minimum capacity of 500 gallons. If site conditions prevent a tank of this size, other size proposals may be considered.
3. Concrete tanks shall be sealed with a heavy cement- based waterproof coating, Thoroseal or approved equal.
4. Excavations for tanks shall be in accordance with manufacturer's requirement. Such excavations shall provide a level, uniform load bearing surface free of imbedded rock or boulders. Wet or unstable beds shall be over-excavated, backfilled and compacted with an approved material suitable to stabilize and support the tank.

5. Tanks shall have adequately sized access opening with water-tight risers extending to the ground surface.
6. Concrete tanks shall be tested for water tightness by the method described for septic tanks.
7. Pump tanks installed in areas of known seasonal groundwater at six (6) feet or less from original grade shall be made non-buoyant according to the manufacturer's recommendations or other methods approved by SCEH.
8. A minimum two (2) foot separation shall be maintained between the pump tank and septic tank.
9. Pump tanks shall receive clarified effluent that has been treated by a septic tank equipped with an effluent filter or other approved pretreatment device.
10. Plans detailing the proposed use of a pump tank, pump and all appurtenant components complete with control switch elevations shall be prepared by a Qualified Professional and provided to SCEH for review prior to permit approval.
11. The emergency storage volume available in a pump tank shall be 120 gallons or 1/3 of the design flow, whichever is greater. The storage volume will be considered the liquid capacity between the invert of the inlet tee and the point of high water alarm activation.
12. Dosing tanks shall be vented back through the septic tank, or have a separate vent.
13. Only UL approved pumps designed for sewage effluent shall be used.
14. The pump discharge line shall be equipped with a check valve designed for wastewater effluent unless the dispersal area is located down slope of the pump in which case a siphon relief hole shall be drilled in the discharge line.
15. The pump shall be placed so that it remains submerged to allow for cooling and does not contact sewer gas. In no case shall the pump be set less than four (4") from the bottom of the tank.
16. The connection between the pump and the force main shall allow for ease of pump removal and maintenance.
17. Float control switches shall be UL and/or CSA listed and set securely in accordance with manufacturers' specifications. Switches shall not be attached to the pump discharge assembly.
18. The high water alarm float switch shall be set to activate two (2") inches above the pump "on" switch.
19. The alarm float switch shall activate an audible and visible alarm which remains on once activated until shut off by the property owner or maintenance personnel.
20. The pump and alarm shall be powered by separate circuits.
21. The pump, pump control panel and all associated components shall be installed as per the National Electrical Code (NEC) and inspected/approved by the local Building Department.
22. Splice boxes shall be external to and attached to the tank riser, watertight, corrosion proof, resistant to UV exposure and adequately sized to accommodate multiple wiring configurations.

4.6 Distribution Boxes

1. In every dispersal field on level terrain an approved distribution box shall be used.
2. On sloping terrain distribution boxes shall be used and may require "speed levelers" or similar device to evenly distribute effluent.
3. The size and type of distribution box shall be included in the design proposal.
4. Distribution boxes shall be set level on a concrete base with a minimum of 2 inch larger dimension that the distribution box on all sides to prevent settling.
5. The use of more than one distribution box may be required in certain situations.
6. Wood and metal distribution boxes are unacceptable.
7. Other types of distribution boxes may be proposed for SCEH approval.

4.7 Gravity OWTS

1. Gravity OWTS shall be a subsurface dispersal field (leach field) designed using not more than 6 square-feet of infiltrative area per linear foot as the infiltrative surface. Trench width shall not exceed 3 feet.
2. Dispersal field trenches shall be placed into undisturbed in-situ soils.
3. Dispersal field trenches on sloping ground shall follow surface contours.
4. Dispersal field trenches shall not exceed one hundred (100) feet in length.
5. The bottom of the dispersal field trench shall be level to within a tolerance of two (2) vertical inches in 100 feet.
6. All smeared or compacted soil surfaces in the sidewalls or bottom of dispersal field trenches shall be scarified to the depth of the smearing or compaction and the loose material removed prior to placement of drain rock or chambers.
7. Dispersal field trenches shall be evenly filled with ¾" to 2-1/2" washed river rock, gravel or other rock approved by SCEH. Rock that easily decomposes is prohibited.
8. Effluent sewer, header pipe, dispersal line and fittings shall be a minimum four(4) inch diameter, watertight and one of the following: (A) Schedule 40 PVC that meets the most current ASTM D-1785 for three (3) inch pipe and D-2672 for minimum four (4) inch pipe; (B) Schedule 40 Acrylonitrile-Butadiene-Styrene (ABS) that meets the most current ASTM Specification D-2468; (C) ASTM SDR 35 with solvent-welded or rubber-gasketed joints; or (D) Other material approved by the SCEH.
9. The first five (5) feet of pipe extending from the septic tank and from the distribution box shall be solid, non-perforated pipe.
10. Perforated dispersal line shall have two (2) rows of holes spaced one hundred-twenty (120) degrees apart and sixty (60) degrees on either side of a centerline.
11. All new OWTS shall have a 100 percent replacement area available that will serve the development if the primary dispersal field fails.
12. No dispersal field or replacement area shall be covered by any type of impermeable surface.
13. Once an OWTS is installed, the soils in the dispersal field area and replacement area shall remain undisturbed and not subject to vehicular traffic or confined animal use.
14. Setback requirements for conventional gravity OWTS are listed in Appendix E.

4.8 Intercept Drains (Curtain Drain)

Intercept drains are gravel filled trenches with perforated pipe installed up gradient from the dispersal field area for the purpose of intercepting, diverting, and discharging perched groundwater away from the dispersal field. The use of an intercept drain may be proposed in conjunction with a site specific OWTS design requiring perched groundwater to be lowered.

The use of an intercept drain to lower perched groundwater for the purpose of establishing a dispersal field will be considered when all of the following criteria can be met:

1. The native ground slope exceeds 5 percent.
2. Soil profile examination shows the presence of impermeable material upon which groundwater will perch.
3. The trench bottom of the intercept drain can be laid tied into the impermeable material.
4. Monitoring to demonstrate that the intercept drain is lowering of the perched water level sufficiently for the intended dispersal field is required. This shall be accomplished through the placement of monitoring wells in the area between the intercept drain and the upper most portion of the dispersal field.

5. No portion of an intercept drain shall be located less than 10 feet up gradient, 15 feet laterally, or less than 50 feet down gradient from any septic tank or dispersal field, replacement area, or less than 5 feet from any property line.

4.9 OWTS Construction Inspection

SCEH staff inspectors shall perform OWTS construction/installation inspections to ensure conformance with applicable standards and all terms and conditions contained within the OWTS permit.

Installers shall provide at least 24 hours advance notice to SCEH staff inspectors prior to reaching specified construction steps. Notification must include applicant's name, assessor parcel number and site location. Failure to provide sufficient notice may cause delays in the construction of the OWTS.

The inspection steps required for a particular OWTS installation will vary with the type and complexity of the approved OWTS design. Specific inspections required for non-standard OWTS will be listed and included as part the approved permit.

SCEH staff inspectors may combine one or more required inspections into a single site visit. The following inspections shall be required unless the applicant obtains SCEH staff inspector's waiver of any inspections:

1. Preconstruction site visit to ensure proper OWTS layout.
2. Open trench inspection.
3. Septic Tank installation with risers and filter and/or pump tank and components where applicable.
4. Septic tank (Pump tank) water tight inspection.
5. Drain rock placement and piping connections from septic tank, distribution box etc.
6. Final Inspection

Electrical wiring for OWTS shall be completed under appropriate permit from the Siskiyou County Building Division and will be inspected by Building Division staff.

Final inspection of the constructed OWTS occurs when all portions of the OWTS and all other construction features required by these standards or by permit conditions have been completed.

In certain cases, written verification from a Qualified Professional may be accepted and/or required in lieu of an inspection by SCEH staff inspectors.

SCEH staff inspectors shall sign and date the appropriate section of the OWTS permit upon satisfactory completion of inspections.

4.10 OWTS Operation and Maintenance

OWTS benefit from routine maintenance and consideration of the types of wastes sent to them. SCEH recommends the following practices to prolong the lifespan of OWTS and to prevent potential environmental impacts associated with their use:

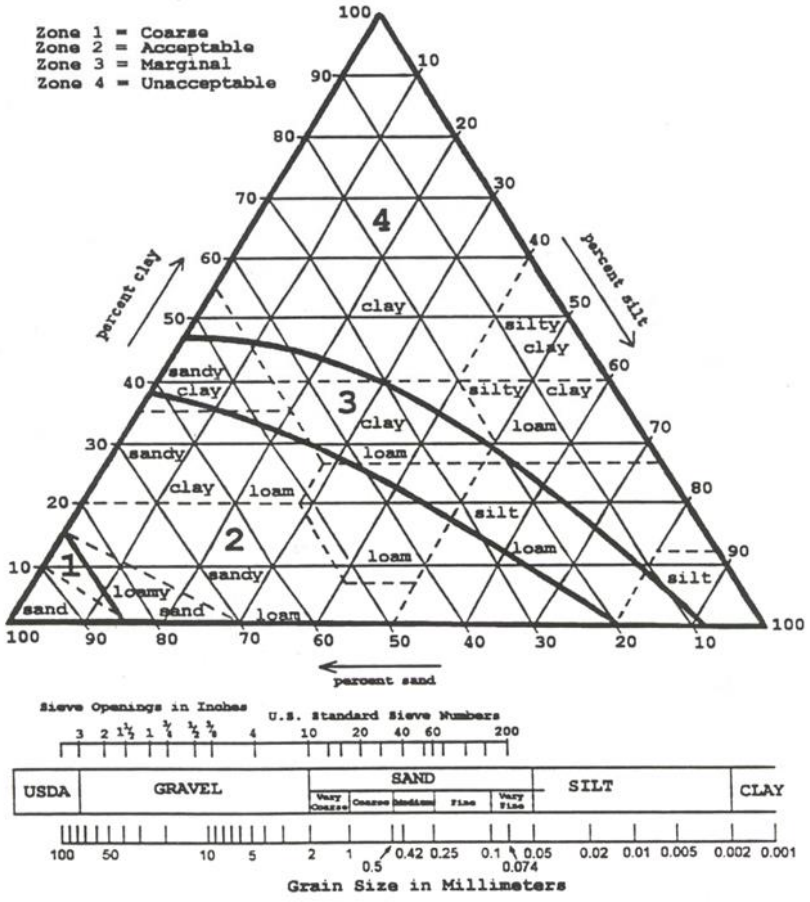
1. Only allow domestic wastewater to enter the system. Other substances such as pesticides, strong solvents, non-household chemicals, etc. can harm the septic tank and may contaminate groundwater.

2. Avoid disposing of fats, oils, and greases to the OWTS. These substances can accumulate in dispersal field piping and receiving soils leading to premature OWTS failure.
3. Inspect the depth of sludge in the septic tank every three years. Tanks should be pumped when the sludge layer accumulates to no more than one half to two thirds of the septic tank.
4. Dispersal fields, including reserve areas, shall be protected. Soil compaction can reduce their ability to receive wastewater. Do not drive vehicles, build, or place heavy equipment over dispersal field areas. Hoofed animals such as goats, sheep, horses, and/or cattle can compact soils and cause premature leach field failure.
5. Trees and shrubs shall not be planted in the dispersal area because roots can become invasive and cause clogging.
6. Divert water run-off away from dispersal field areas.

APPENDIX A – Soil Percolation Suitability Chart for On-Site Waste Treatment Systems

APPENDIX A

APPENDIX A SOIL PERCOLATION SUITABILITY CHART FOR ON-SITE WASTE TREATMENT SYSTEMS



Instructions:

1. Plot texture on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjust for coarse fragments by moving the plotted point in the 100 percent sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.
3. Adjust for compactness of soil by moving the plotted point in the 100 percent clay direction an additional 15% for soils having a bulk-density greater than 1.7 gm/cc.

Note: For soils falling in sand, loamy sand, or sandy loam classification bulk density analysis will generally not affect suitability, and analysis is not necessary.

APPENDIX B – Observation Well Reporting Log

(Example)

Job #_____

Project _____

APN _____

TEST HOLE # _____

ELEVATION OF RIM _____

DEPTH OF WELL _____

DATE	TIME	DEPTH TO WATER SURFACE	TOTAL RAINFALL TO DATE	RAINFALL PAST 24 HOURS*	COMMENTS

*Utilize most local official rainfall data

APPENDIX C – Quantities of Waste Water Flows

APPENDIX C
Quantities of Waste Water Flows

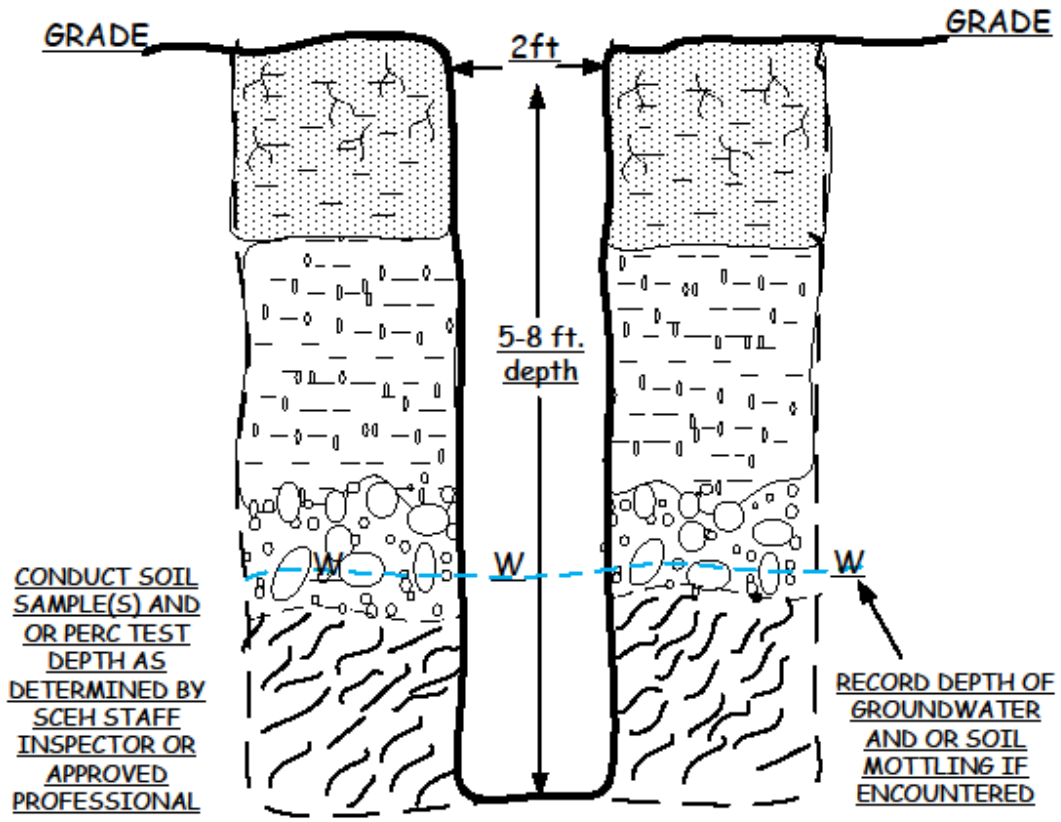
Type of Establishment		Gallons Per Day*	Minimum gallons Per Establishment Per Day*
Airports		5 (per passenger)	150
Bathhouses and swimming pools		10 (per person)	300
Camps: (4 persons per campsite, where applicable	Campground w/central comfort stations	35 (per person)	700
	W/ flush toilets, no showers	25 (per person)	500
	Construction camps- semi permanent	50 (per person)	1000
	Day camps- no meals served	15 (per person)	300
	Resort camps (day/night) w/ limited plumbing	50 (per person)	1000
	Luxury camps	100 (per person)	2000
Churches		5 (per seat)	150
Country clubs (per resident member)		100 (per resident member)	2000
County clubs (per non-resident member present)		25 – (per non-resident member)	0
Dwellings	Boarding houses	150 (per bedroom)	600
	Boarding houses- additional for non-residential boarders	10 (per person)	0
	Rooming Houses	80 (per person)	500
	Condominiums, multiple family dwellings – including apartments	300 (per unit)	900
	Single Family dwellings	300 (not exceeding 2 bedrooms)	300
	Single family dwellings with 3 or more bedrooms	75 (fourth & each succeeding bedroom)	450
Factories (exclusive of industrial waste- w/shower facilities)		35 (per person per shift)	300
Factories (exclusive of industrial waste- w/o shower facilities)		15 (per person per shift)	150
Hospitals		250 (per bed space)	2500
Hotels with private baths		twelve (12)0 (per room)	600
Hotels without private baths		100 (per room)	500
Institutions other than hospitals		twelve (12)5 (per bed space)	twelve (12)50
Laundries-self service		500 (per machine)	2500
Mobile home parks		250 (per space)	750
Motels – w/ bath, toilet, and kitchen waste		100 (per bedroom)	500
Motels- w/o kitchens		80 (per bedroom)	400
Picnic Parks- toilet waste only		5 (per picnicker)	150
Picnic Parks- w/ bathhouses, showers, and flush toilets		10 (per picnicker)	300
Restaurants		40 (per seat)	800
Restaurants – single service		2 (per customer)	300
Restaurants – w/ bars and/or lounges		50 (per seat)	1000
Schools	Boarding	100 (per person)	3000
	Day – w/o gyms, cafeterias, or showers	15 (per person)	450
	Day – w/ gyms, cafeterias and showers	25 (per person)	750
	Day – w/ cafeteria, but w/o gyms or showers	20 (per person)	600
Service Stations		10 (per vehicle served)	500
Swimming pools and bathhouses		10 (per person)	300
Theater	Movie	5 (per seat)	300
	Drive-In	20 (per car space)	1000
Travel Trailer Parks – w/o individual water and sewer hookups		50 (per space)	300
Travel Trailer Parks – w/ individual water and sewer hookups		100 (per space)	500
Workers	Construction – as semi permanent camps	50 (per person)	1000
	Day – at schools and offices	15 (per shift)	150

*The agent may reduce the above design flow estimates as provided in this policy.

APPENDIX D.1 – Typical Backhoe Soil/Groundwater Observation Test Pit

COUNTY OF SISKIYOU
DIVISION OF ENVIRONMENTAL HEALTH
LAND USE UNIT 806 South Main ST.,
Yreka, CA 96097 Ph. (530) 841-2100

Typical backhoe soil /groundwater observation test pit

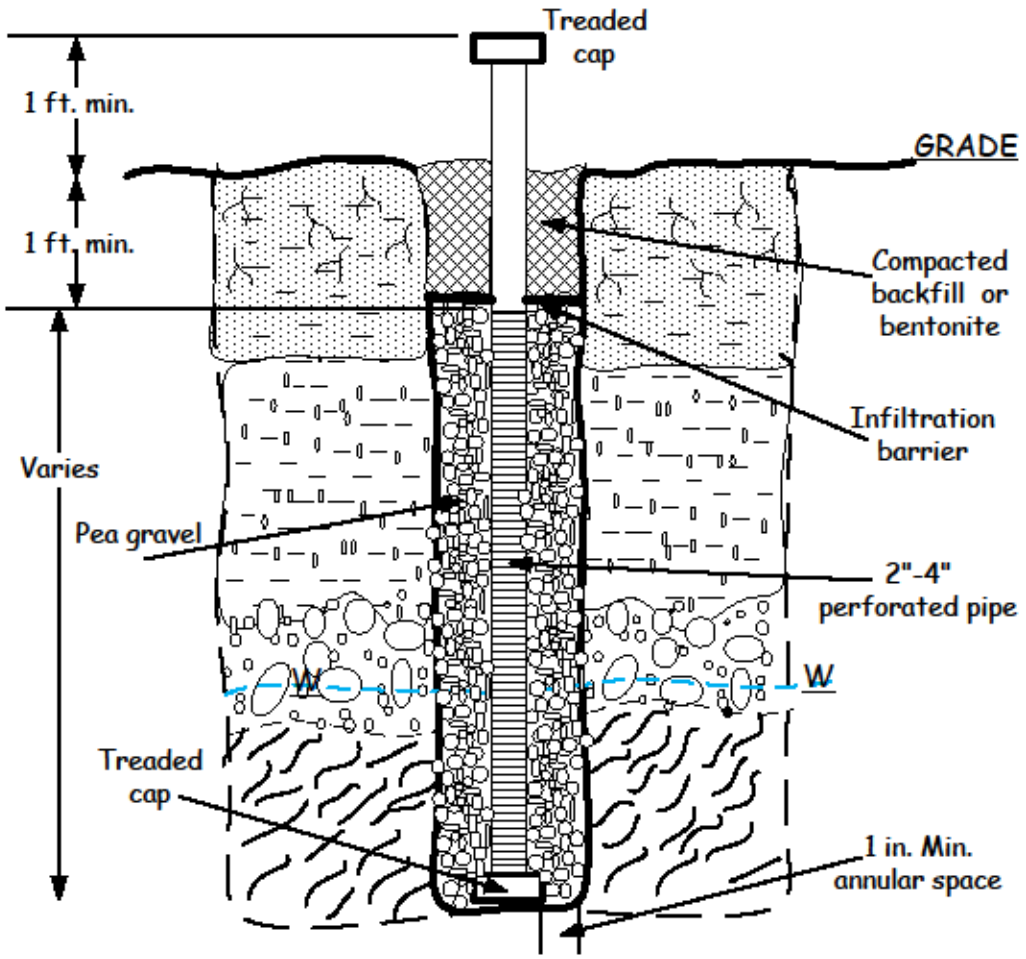


- Typical backhoe test pit(s), location and number are to be determined by SCHD field inspector. Pits are generally two (2) feet wide and five to eight feet deep.
- Soil textural analysis and or percolation testing shall be performed within the designated soil horizon as determined by the SCEH field inspector
- Provide shallow graded sloped ramp on one end of excavation pits for safe soil observation.
- Call before you -DIG-, for utilities locate. Comply with Cal-Osha and other applicable federal, state, and local requirements while preforming work

APPENDIX D.2 – Typical Groundwater Observation Well

COUNTY OF SISKIYOU
DIVISION OF ENVIRONMENTAL HEALTH
LAND USE UNIT 806 South Main ST.,
Yreka, CA 96097 Ph. (530) 841-2100

Typical groundwater observation well



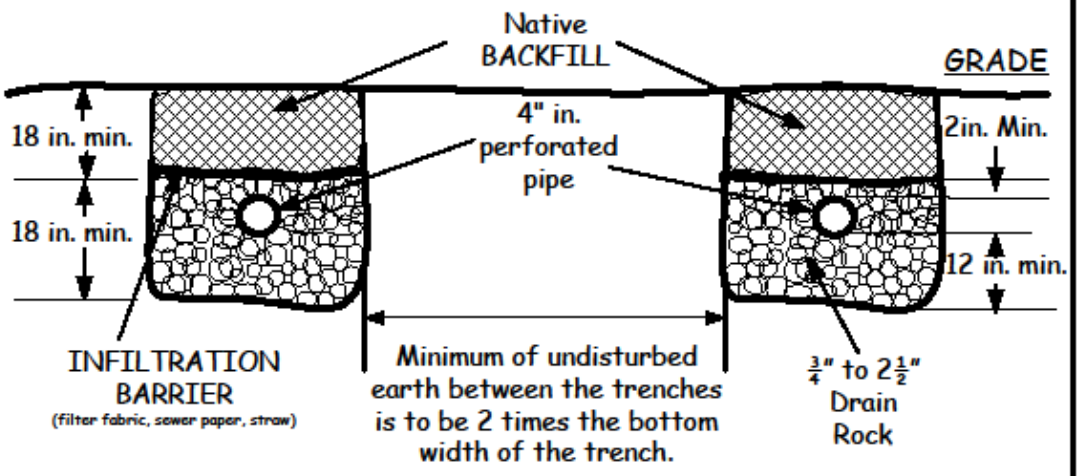
- Well depth must be sufficient to verify appropriate groundwater separation from the bottom of the proposed leach-field trench.
- Each site shall have a minimum of two wells to demonstrate groundwater levels in the proposed primary and expansion areas.
- Provide a completed "notification of wet weather monitoring well installation" form to SCHD for approval prior to commencing observation well construction work.
- Call before you -DIG-, for utilities locate. Comply with Cal-Osha and other applicable federal, state, and local requirements while preforming work

APPENDIX D.3 – Typical Conventional Leach-Field Gravel Trench Installation

COUNTY OF SISKIYOU
DIVISION OF ENVIRONMENTAL HEALTH
LAND USE UNIT 806 South Main ST.,
Yreka, CA 96097 Ph. (530) 841-2100

Typical conventional leach-field gravel trench installation.

Typical 2 foot or 3 foot wide conventional leach-field trench.

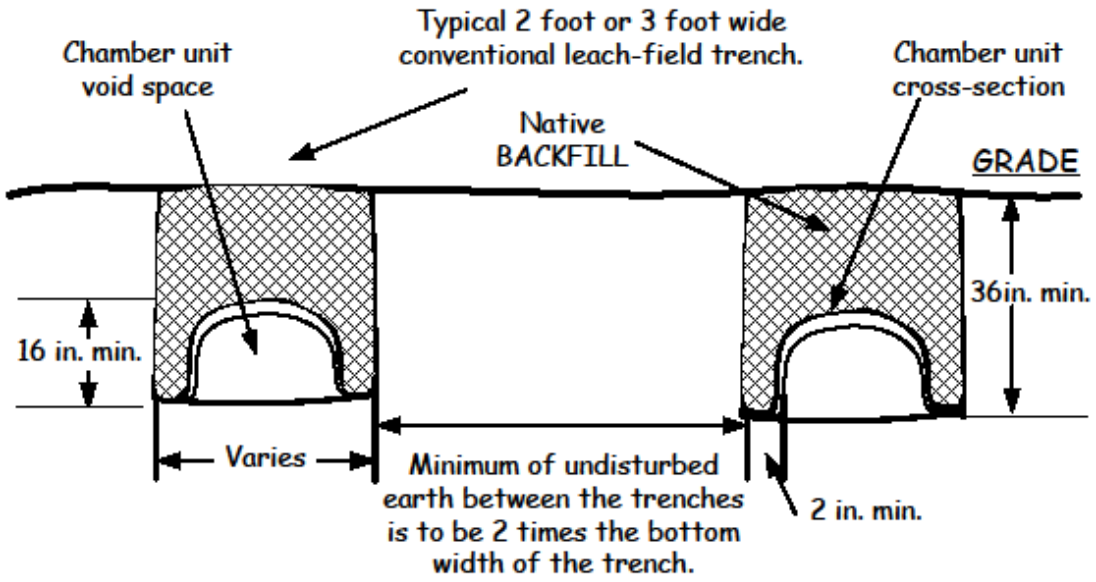


- Details shown represent the typical conventional rock leach-line configuration, trenches may be 2 feet wide or 3 feet wide. Actual trench dimensions may vary based on approved design.
- All smeared or compacted soil surfaces in the sidewalls or bottom of the trenches shall be scarified to the depth of the smearing and/or compaction. All loose material is to be removed from the trench prior to the placement of drain rock.
- Actual drain-field length, depth and width (design) is to be installed as specified by the SCEH issued septic system permit.
- Materials used shall be as specified within the Siskiyou County OWTS regulations and technical manual.

APPENDIX D.4 – Typical Conventional Leach-Field Chamber Trench Installation

COUNTY OF SISKIYOU
DIVISION OF ENVIRONMENTAL HEALTH
LAND USE UNIT 806 South Main ST.,
Yreka, CA 96097 Ph. (530) 841-2100

Typical conventional leach-field chamber trench installation.

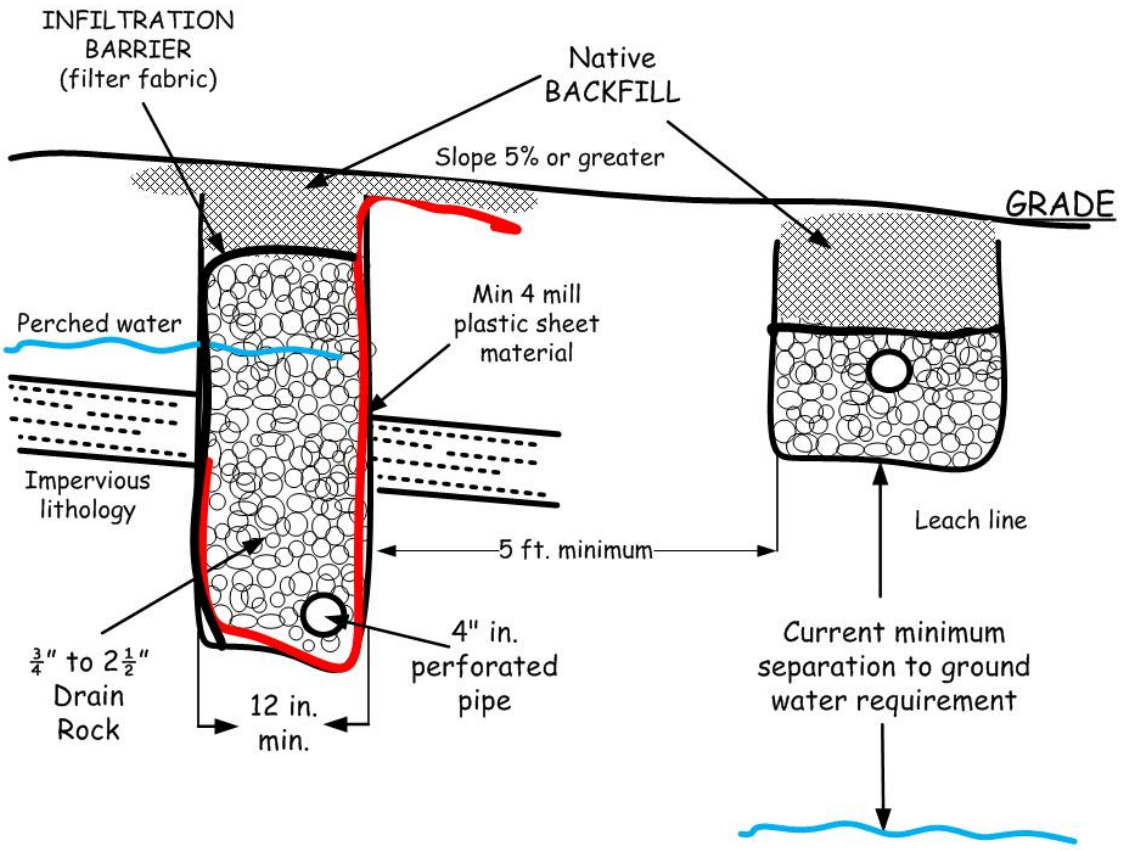


- Details shown represent the typical conventional chamber configuration, trenches may be 2 feet wide or 3 feet wide. Actual trench dimensions vary based on approved design.
- All smeared or compacted soil surfaces in the sidewalls or bottom of the trenches shall be scarified to the depth of the smearing and/or compaction. All loose material is to be removed from the trench prior to the placement of chamber units.
- Actual number of chambers per line (length), depth and width (design) is to be installed as specified by the SCEH issued septic system permit.
- Materials used shall be as specified within the Siskiyou County OWTS regulations and technical manual.

APPENDIX D.5 – Typical Intercept Drain Trench Installation

COUNTY OF SISKIYOU
DIVISION OF ENVIRONMENTAL HEALTH
LAND USE UNIT 806 South Main ST.,
Yreka, CA 96097 Ph. (530) 841-2100

Typical intercept drain trench installation.



- Site will have a natural outlet that will allow the drain installed on proper grade to daylight around the propose septic system.
- Actual intercept drain length, depth and width (design) is to be installed as specified by the SCEH issued septic system permit.
- Materials used shall be as specified within the Siskiyou County OWTS regulations and technical manual.

APPENDIX E – Minimum Separation Distances

APPENDIX E
Minimum Separation Distances

Items Requiring Setback	From Subsurface dispersal trench Including Replacement Area	From Septic Tank ,Treatment Units, Effluent Sewer and Distribution Units
Groundwater Supplies and Wells*	100'	50'
Surface Waters - Year round**	100'	50'
Surface Waters - Seasonal**	50'	50'
Groundwater Interceptors	20'	10'
Irrigation Canals - Lined	25'	25'
Intercept / curtain drains	15', (50' laterally)	15'
Irrigation Canals - Unlined (Up-gradient/Downgradient)	25'/50'	25'/50'
Downgradient Escarpments/Cuts Which Intersect Layers that Limit Effective Soil Depth	50'	25'
Downgradient Escarpments/Cuts Which Do Not Intersect Layers that Limit Effective Soil Depth	25'	10'
Property Lines	5'	10'
Water Lines	10'	10'
Foundation Lines of Any Building	10'	5'
Underground Utilities	10'	-

*Additional setbacks for public water systems are in section 9.4.10, 9.4.11, and 9.4.twelve (12) in the State Water Resources Control Board OWTS Policy.
** Does not prevent stream crossings of pressure effluent sewers.

If the Health Officer has determined that there is inadequate area to obtain the distances required in Appendix E, he or she may nevertheless approve the construction of the system if it is a replacement system and a reasonable low risk assessment to public health and the environment can be made.

APPENDIX E CONTINUED – OWTS SETBACK REQUIREMENTS

OWTS Horizontal Separation Distance to Public Water Wells & Surface Water Intake State OWTS Policy Section 9.4.10.1, .4, .5

	Public Water Well	Surface Water Intake
New OWTS	**150 ft.**	**400 ft**. from High Water mark of Water Body when: Dispersal system is within twelve (12)00 ft. of intake and, within the catchment of the drainage such that it may Impact the intake point.
New OWTS		**200 ft.** from High Water mark of Water Body when: Dispersal system is between twelve (12)00 ft. and 2500 ft. intake and, located within the catchment of the drainage such that it may impact the intake point.
Replacement OWTS	**150 ft.**	**400 ft**. from High Water mark of Water Body when: Dispersal system is within twelve (12)00 ft. of intake and, within the catchment of the drainage such that it may impact the intake point.
Replacement OWTS		**200 ft**. from High Water mark of Water Body when: Dispersal system is between twelve (12)00 ft. and 2500 ft. intake and, located within the catchment of the drainage such that it may impact the intake point.

State OWTS Policy 9.4.11

For replacement OWTS that do not meet the above horizontal separation requirements, the replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such case, the replacement OWTS shall utilize supplemental treatment and other mitigation measures, unless the permitting authority 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.

State OWTS Policy 9.4.twelve (12)

For new OWTS installed on parcels of record existing as of May 13, 2013 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 pathogens as specified in section 10.8 (State OWTS Policy) and any other measures prescribed by the permitting authority.

APPENDIX F – Graywater Regulations

Graywater Regulations

Introduction

Siskiyou County Division of Environmental Health SCEH) issues permits for graywater treatment systems. These regulations provide criteria for permitting and design of these systems for new construction and for modifications of existing wastewater treatment systems.

Reference Standards

Graywater systems shall be designed, constructed, and operated in accordance with the 2016 California Plumbing Code (CPC) Chapter 15, Section 1502. SCEH is the Enforcing Agency, and the Authority Having Jurisdiction for all components of the graywater treatment system outside of the building footprint. Modifications to interior plumbing systems are the jurisdiction of the Siskiyou County Building Division.

A graywater system is not a replacement for an Onsite Wastewater Treatment System (OWTS). Graywater systems do not reduce the size of an OWTS, and all graywater must be able to be redirected to an approved OWTS or public sewer.

Permitting

Graywater systems are permitted using the SCEH Onsite Wastewater Treatment System (OWTS) Permit Application. Clothes washer systems in compliance with 2016 CPC Section 1502.1.1 are exempt from OWTS permit. All other graywater systems require an OWTS permit. All graywater OWTS permit applications must be accompanied by a building permit application for the required internal plumbing modifications.

1. Graywater OWTS permit applications shall be submitted through the Siskiyou County Environmental Health Division simultaneously with submittal of the building permit application to the Siskiyou County Building Department.

2. Graywater OWTS permit applications must include a design submittal, per Section 2.6 of the Siskiyou County Onsite Wastewater Treatment System (OWTS) Regulations and Technical Manual, and the appropriate fee.

3. SCEH inspector may perform a pre-site inspection to verify the conditions described in the design report. If the application is complete and the design acceptable, the permit application will be approved for construction and SCEH-approved plans will be provided to the applicant. SCEH reserves the right to make any and all modifications to the proposed design that may be necessary to meet these regulations and/or the CPC.

4. The applicant must notify the SCEH inspector a minimum of 48 hours prior to the construction of the gray water system. During construction, the SCEH inspector will make a site visit to verify that the construction is consistent with the SCEH approved design. Deviation from the approved design may require correction at the discretion of the inspector. If the construction is acceptable, the SCEH inspector will finalize the OWTS permit and approve the construction. The Building Division retains authority for interior plumbing and other building construction permit approvals.

APPENDIX G – Areas Requiring Additional Testing

Areas in Siskiyou County where conditions listed in 9.1.1-9.1.twelve (12) occur and are problematic for Tier 1 Siting criteria.

Section 9.1 Conditions/Characteristics	Geographic Area/Hydrologic Unit (HU) Tier 1 Requirements problematic	Mitigation Measures that may be Considered (Wet Weather Testing in All Areas)	
		New System (No Variance)	Repair
9.1.1 Degree of Vulnerability due to Hydrogeological conditions.	As determined County wide	NSOWTS -Supplemental Treatment	NSOWTS, Supplemental Treatment
9.1.2 HighQualityWaters/Environmental Conditions requiring enhanced protection	Shallow ground water protection Mt. Shasta, McCloud, Shasta and Scott Valley basin areas.	Supplemental Treatment	Supplemental Treatment
9.1.3 Shallow Soils	North County Hornbrook formation Geologic zone.	NSOWTS -Supplemental Treatment	NSOWTS, Supplemental Treatment
9.1.4 OWTS in area of high domestic well usage	Greenview, Edgewood, Dewitt Park	Supplemental Treatment &	Supplemental Treatment
9.1.5 OWTS in area of fractured rock	As determined (fractured basalt areas)	NSOWTS, Supplemental Treatment	NSOWTS, Supplemental Treatment
9.1.6 OWTS in area of poorly drained soils	North County Hornbrook formation Geologic zone.	NSOWTS, Supplemental Treatment	NSOWTS - Supplemental Treatment
9.1.7 Surface Water vulnerable to pollution from OWTS		NSOWTS, Supplemental Treatment	NSOWTS, Supplemental Treatment
9.1.8 OWTS within Tier 3 area	Currently no listed impaired water bodies.	NSOWTS, Supplemental Treatment, Provisions per Tier 3	Special Provisions per Tier 3
9.1.9 Area of high OWTS density	Greenview, Edgewood, Dewitt Park, Carrick Addition, Macdoel, Tenant	NSOWTS, Supplemental Treatment, Cumulative Impact Study, Water Efficient Fixtures	NSOWTS, Supplemental Treatment, Cumulative Impact Study, Water Efficient Fixtures
9.1.10 Parcel size susceptible to hydraulic mounding, nitrogen loading	None identified, As determined County Wide	NSOWTS, Supplemental Treatment	NSOWTS, Supplemental Treatment
9.1.11 Multiple OWTS predating standards	As determined County wide	Conformance with RTM	Conformance with RTM
9.1.twelve (12) OWTS located within pertinent setbacks	As determined County wide	NSOWTS, Supplemental Treatment	NSOWTS, Supplemental Treatment