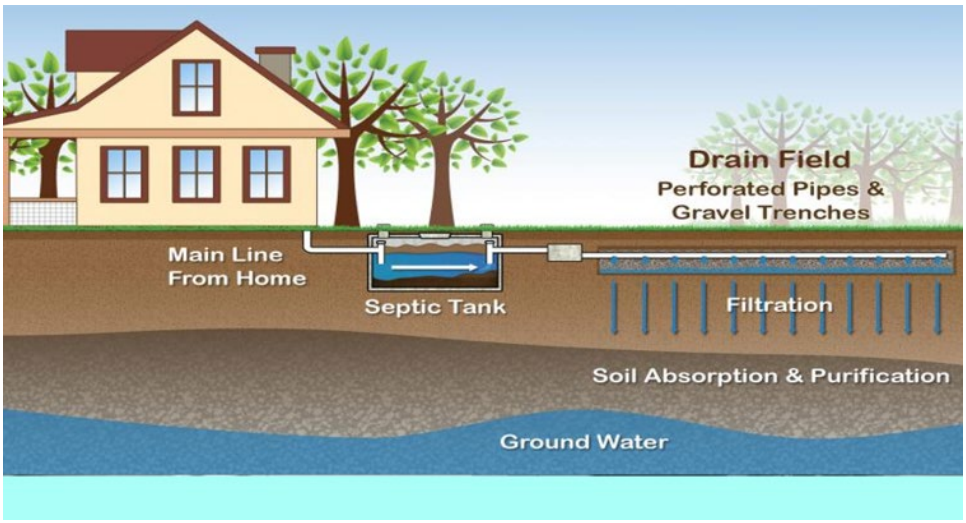
Individual Sewage Disposal System Guide:



INDIVIDUAL SEWAGE DISPOSAL SYSTEMS GUIDE

In 1962, the Nevada Legislature passed a bill stating that the State Board of Health shall adopt regulations to control the use of a residential individual system for the disposal of sewage in this State. Those regulations are effective except in health districts in which a district board of health has adopted regulations to control the use of a residential individual system for the disposal of sewage within that district.

THIS GUIDE APPLIES TO THE FOLLOWING AREAS:

Elko County
Esmeralda County
Eureka County
Lincoln County
Lyon County
Nye County
(Nye Exception, Pahrump)
Storey County
White Pine County

CONTACT

NEVADA DIVISION OF PUBLIC AND BEHAVIORAL HEALTH

ENVIRONMENTAL HEALTH SECTION

Phone
775-684-5280

Website
https://www.dpbh.nv.gov

Email
EHSCUSTOMERSERVICE@HEALTH.NV.GOV

If you have any questions, please contact us. We want to help you avoid mistakes that may require costly and time-consuming corrections.

All staff are field inspectors calls may not be returned until the next business day.

Created: 10/19/2022

Individual Sewage Disposal System

An Individual Sewage Disposal System (ISDS) is for a single-family dwelling. The primary components are a septic tank that collects and treats waste and a drain field to capture, disperse, and filter treated waste into areas that will not contaminate groundwater.

Nevada Administrative Code Chapter 444 does not apply to commercial systems or one or more buildings that are not used as single-family dwelling.

Website: https://ndep.nv.gov/

Every dwelling not connected to the community sewer must have its own ISDS system. Approval must be obtained from the administrative authority to

- construct,
- alter or
- extend

an individual sewage disposal system.

COUNTY PROGRAMS

Churchill County Building Department **(775) 428-0264**
https://www.churchillcountynv.gov/106/Septic-Application-Information

Humboldt County Building Department **775-623-6322**
https://www.humboldtcountynv.gov/164/Handouts

Lander County Building Department **(775) 635-2860**
https://files4.revize.com/landercountynv/document_center/Building/ISDS%20Application%207-20-22.pdf

Lyon County Building Department **(775) 463-6531**
https://www.lyon-county.org/582/Information-and-Applications

Nye County, Pahrump Building Department **775-751-3773**
https://www.nyecountynv.gov/992/Application-Submittal

HOW TO APPLY FOR A PERMIT

Online Application system

https://nvdpbh.aithent.com/login.aspx

If you cannot use the system, a paper application will be accepted at a field office or by mail.

These local health authorities require a separate permit

This guide does not apply to residents of Carson City, Douglas County, Washoe County and Clark County. Residents of these areas with questions should contact:

Carson City & Douglas County
775-887-2190
www.gethealthycarsoncity.org

Washoe County Health District
775-328-2400
www.washoecounty.us/health

Southern Nevada Health District
702-759-0588
www.southernnevadahealthdistrict.org

Commercial Systems

Contact:
Nevada Department of Environmental Protection
Phone: 775-687-4670

WHO MAY INSTALL AN ISDS?

Nothing in Nevada State Law prohibits a homeowner from performing a percolation test or installing a standard ISDS. The health authority may require information to be verified by an engineer.

CONSTRUCTION PERMITS

Construction permits are valid for 1 year from the date of issue. A permit is considered void 12 months after the date of issuance if the proposed construction, alteration, or extension of the individual sewage disposal system is not completed within that period. A fee of $332 is required to extend a permit to construct an individual sewage disposal system for a 1-year period after the expiration date of the permit.

OCCUPANCY PERMITS

The individual sewage disposal system must be inspected, and all additional requirements met (as-built plans and well logs submitted, etc.) before an occupancy permit will be issued. Please be aware this document is required to connect to utilities.

PERMIT FEES

For a permit to construct an individual sewage disposal system for a single-family dwelling, including a review of the plan for the system and an initial inspection of the system (Including: primary treatment units, alternative treatment, or engineered disposal system designs)
$498.00

Resubmission or revision to a plan described above, or tank-only replacements
$124.00

Reinspection of an individual sewage disposal system
$100.00

Permits are active for one year. Systems not completed within that time will be required to resubmit and pay additional fees.

SITE SUITABILITY, NEW SYSTEMS

The owner must be aware of the depth of any impermeable soil layers, high groundwater levels, and slope when considering a septic system location.

If your system has impermeable layers, high ground water, slope, or bodies of water, contact an engineer to discuss other options.

Excavation

- Is the perc test area within the area of the proposed leach field?
- Was the bottom of the test pit at least 4 feet below the bottom of the proposed leach field? (Required)
- Take a color photograph of the excavation site, showing depth.

Impermeable Layers

- Did you observe a rock layer below the surface?
- Did you observe clay below the surface?

High Groundwater

- Was groundwater present in the bottom of the test pit?
- Does the soil have an alkali crust on the surface, a rotten egg smell, or a blue-gray or green-gray color that may indicate frequent/continuous saturation?
- Is the soil mottled with areas around roots or cracks that look like rust, or is the soil stained a dark red-black or red-brown color, which may indicate high water?

Slope

- What is the estimated slope of the leach field area?

Other

- How far away is the nearest body of water (i.e., lake, river, pond, creek, ditch, or wetland)?
- How far away are compacted soils?
- How far away are wells and water supply lines?
- Does surface drainage direct run-off roofs, patios, or driveways away from the leach field?

PLAN REVIEW

Submission
Plans must be submitted at least **30 days** before beginning construction, remodeling, or replacement of an individual sewage disposal system.

Documents required
- Complete paper or online application
- Two percolation tests
- One soil profile for each test pit
- Plot plan
- Well driller's log (if applicable.

If the required items are not included in your plan a revision and resubmittal will be required, and the review process will be delayed. Plan reviews may take up to 30 days AFTER receiving all required documents.

Construction may not begin until the construction permit has been issued.

Call for an appointment at least 5 days before.

Due to staffing levels, if less than 24 hours' notice is given, we cannot guarantee the inspection can be completed.

PLOT PLANS MUST HAVE THE FOLLOWING

- The name, address, and current phone number of the applicant.
- The legal description of the property, including the lot and block number, township, range, section, and assessor's parcel number.
- The title and date of the plan and the signature of the owner or his or her representative.
- A map of the area in which the individual sewage disposal system will be located that shows the location of the roads and streets.
- The location and distance to well and sewage systems on surrounding lots. If the lots are vacant, the plot plan must so indicate.
- The direction of north clearly indicated.
- The distance within 500 feet to any watercourse indicated, including, without limitation, any pond, lagoon, or stream. If there are no watercourses, the plot plan must so indicate.
- The location of each percolation test hole and boring test hole.
- The location and depth of each proposed or actual well, including the depth of casing or surface grout seal.
- Each component of the individual sewage disposal system, which must be properly marked and located at specified distances.
- The distance to city sewers. If there are none, the plot plan must so indicate.
- The distance of each well and soil absorption system to the property line.
- The scale to which the plan is drawn, such as 1 inch = 30 feet, 40 feet, 50 feet, 60 feet, etc.
- The number of bedrooms in the single-family dwelling.
- The capacity of the septic tank.
- The maximum slope across the absorption system area.
- The dimensions of the lot.
- The depth, length, width and spacing of any absorption trenches.
- The location of the water supply lines, building sewer lines and other underground utilities.
- The location of the structures, paved areas, driveways, trees and patios.
- The location of the source of water to be used by the individual sewage disposal system, including, without limitation, a well or other source approved by the administrative authority.
- The location of the reserve absorption area, which must be of a size not less than the size of the primary absorption area.

Source: NAC 444.784

MINIMUM HORIZONAL SEPARATIONS

MINIMUM HORIZONAL SEPARATIONS MUST BE MAINTAINED BETWEEN THE PERIMETER OF THE COMPONENTS OF AN ISDS AND THE FOLLOWING FEATURES.

FEATURE	TANK	FIELD
Building or Structure	8 ft	8 ft
Property Lines	10 ft	10 ft
Well (sealed to 50 feet)	100 ft	100 ft
Well (NOT sealed to 50 feet)	100 ft	150 ft
Residential well water line	10 ft	25 ft
Public water supply wells	150 ft	150 ft
Community water main line	10 ft	10 ft
Streams, Watercourses	100 ft	100 ft
Drainage Channels	25 ft	25 ft
Large Trees or Shrubs	10 ft	10 ft
Disposal Fields	5 ft	NA

SEPTIC TANK CAPACITY

NUMBER OF BEDROOMS	MINIMUM LIQUID CAPACITY
0-3	1,000 Gallons
4	1,200 Gallons
5-6	1,500 Gallons
6+	1,500 gallons + 150 gallons for each additional bedroom

CARE AND MAINTENANCE

- Pump your tank every 3 years.
- Is your toilet paper approved for septic system use?
- Repair leaks or running toilets in the home. Too much water can overload the drain field causing it to fail.
- Reduce or eliminate using a garbage disposal. Food items don't breakdown easily in the septic tank.
- Don't dump items down the toilet such as oils, flushable wipes, paper towels, or household cleaners.
- Dump your RV at a designated RV dump. Chemicals in RVs kill the bacteria needed for a septic system to work.

WATER AND LOT SIZE

PARCELS SERVED BY A DOMESTIC WELL

A minimum area of 1 acre (43,560 sq ft), including public streets and alleys or public right-of-way, lands, or any portion abutting, running through or within a building site, is required for the installation of an ISDS lot served by a well [NAC 444.790]

PARCELS SERVED BY COMMUNITY WATER SUPPLY

Before January 1, 2000

A minimum area of ¼ acres (10,890 sq ft) is required for the installation of an ISDS on a lot served by a community water supply.

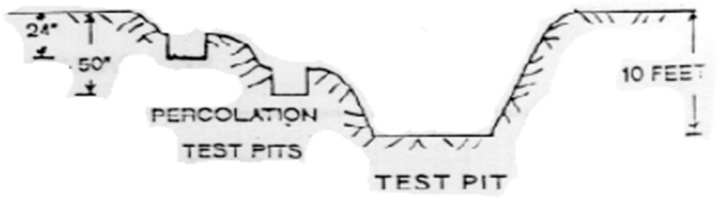
After January 1, 2000

A minimum area of 1/2 acres (20,780 sq ft) is required for the installation of an ISDS on a lot served by a community water supply.

PERCOLATION TESTS

1. The property owner shall perform a percolation test in accordance with NAC 444.796 to 444.7968.

2. Each proposed ISDS requires a minimum of four percolation tests; two tests in the primary leach field and two in the reserve area.



In general, tests cannot be conducted in frozen or disturbed soil – so plan ahead.

   Trenches are to be dug at 3 levels to the depth of ten feet (10'). Tests are to be performed in test holes at levels approximately 24 inches (") and 50 (").

3. The hole must have vertical sides and have a horizontal dimension of 4 to 12 inches. The bottom and sides of the hole must be carefully scratched with a sharp-pointed instrument to expose the natural soil interface. All loose material must be removed from the bottom of the hole which must then be covered with 2 inches of coarse sand or gravel when necessary to prevent scouring. Any soil which has sloughed into the hole before or during the percolation test must be removed.

4. The health authority may require an engineer to verify data relating to the depth of the high groundwater and bedrock, or areas subject or susceptible to flooding, the ground slope, and the results of percolation tests. Verification of maximum high groundwater includes, without limitation, a morphological study of soil conditions with reference to soil color and sequence of horizons.

5. If the natural soil condition has been altered by filling or other attempts to improve wet areas, the health authority may require verification by an engineer to include observation of high groundwater levels under saturated soil conditions.

6. If the natural soil condition has been altered by filling or other attempts to improve the percolation rate of the soil, the health authority may require the verification by the engineer to include a determination of whether the fill material is suitable for an individual sewage disposal system.

How to Calculate The Percolation Rate

Of the 4 tests which were performed use the slowest performance rate

Stabilized Perc Rate
(min) ÷ (inch) = min/in.
15 min ÷ 0.75 inch
mpi = 20 minutes/inch.

Policy Regarding Rapid and Slow Percolation Rates

Rapid Percolation Rate

Percolation rates below 10 mpi will be designed at 10 mpi.

If the absorption trench will be placed in any soil which has a percolation rate of less than 2 minutes per inch, the administrative authority may, depending on the characteristics of the soil and site, require that:
(1) The trench be specially designed by an engineer; and
(2) The required setbacks from any well or watercourses be increased.

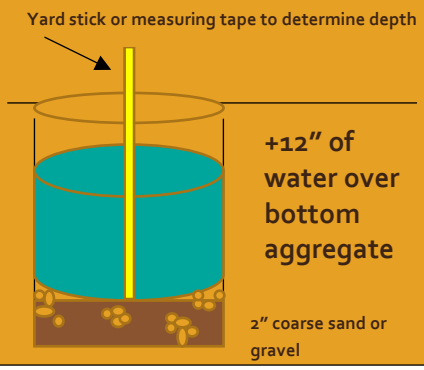
Slow Percolation Rate:

Percolation rates greater than 60 mpi must be designed by an engineer

Percolation rates greater than 120 mpi must be grated a variance from the State Board of Health.

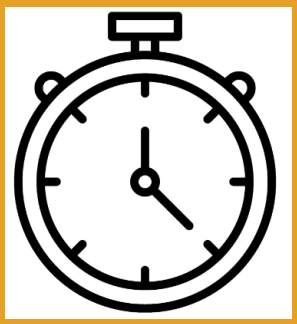
INITIAL METHOD TO DETERMINE TEST TYPE

How to determine if it's a slow or fast perc test.



Step 1: Fill the percolation hole with water to a depth of at least 12 inches over the aggregate. Determine the time needed for the water to seep completely away.

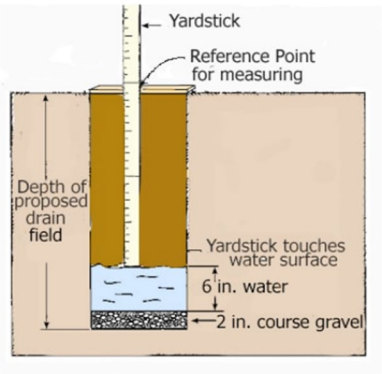
Step2: Fill the percolation hole with water **again** to a depth of at least 12 inches over the aggregate. Determine if the water seeps away in less than 10 minutes.



FAST = Less than 10
The water is gone in less than 10 minutes proceed with the FAST test.

SLOW = More than 10
If water is left in the hole after 10 minutes, proceed with the PRESOAKING procedure, followed by the SLOW test.

FAST PERC TEST

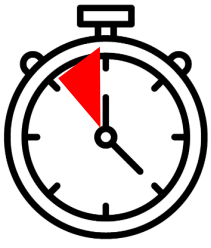


Step 1
Fill the percolation hole with water to a level that is **NO MORE** than 6 inches over the aggregate

Step 2
From a fixed reference point, determine at **10 minutes** intervals how much water drops over the next **60 minutes.**

-If all the water seeps away in less than 10 minutes shorter intervals may be used.

-Between intervals refill the hole as necessary to prevent all the water from seeping away. The level of the water may NEVER exceed 6 inches over the aggregate.



Step 3

The amount of the drop in the level of the water for the FINAL 10-minute period MUST be used to determine the Percolation Rate

SLOW PERC TEST

Presoaking
Fill the hole with water to not less than 12 inches over the aggregate. Maintain that depth for 4 hours. Any water remaining after four hours must be allowed to seep away.

DO NOT REMOVE THE WATER.

Let the hole sit for not less than 16 hours and then begin the test. Do not let more than 30 hours pass before beginning the test. **The test must occur within this time period.**

Step 1
Fill the percolation hole with water to a level that is **NO MORE** than 6 inches over the aggregate

Step 2
From the fixed reference point measure the drop in the level of the water **at 30-minute** interval for a total of **4 hours**. If the first 6 inches of water seeps away in less than 30 minutes, the interval between may be shortened to 10 minutes and the length of the test reduced to one hour.

-Between intervals refill the hole as necessary to prevent all the water from seeping away. The level of the water may NEVER exceed 6 inches over the aggregate.

Step 3
The amount of the drop in the level of the water for the FINAL interval MUST be used to determine the Percolation Rate

EXCEPTION
If two successive measurements do not vary more than 1/16 of an inch, the test may be stopped.

The health authority may require an engineer to verify data.

Forms are available online

1) Go To: www.http://dpbh.nv.gov
2) Look for "Quick Links" (left of photo)
3) "Environmental Health Section"
4) Look for "Sewage Programs"
5) Look for "Individual Sewage Disposal System"
6) Right Column "Forms"

Forms

- Paper Application (Recommended)
- Percolation Test Data (You need 4 copies)
- Soil Profile Data Sheet (You need 2 copies)

Online Application Portal

1) Go To: https://nvdpbh.aithent.com/login.aspx
2) Select: Environmental Health (Tap, Top)
3) Look for: "New Applicants Apply Here"
4) Select: "To apply for a common business application: Click Here"
5) Register for an account Important: Save Username and Password)
6) Select "Sewage Programs"
7) Select" Individual Sewage Disposal System"

Online Documents Required

- Application to construct an individual sewage disposal system (Recommended)
- Plot plan drawn to scale
- Percolation Test Results
- Soil Profile

Questions for On-line Application

- How many bedrooms?
- Assessor's Parcel Number (APN)?
- How many acres?
- Who is installing the system?
- Do you have, or plan to install, an accessory structure with plumbing?
- Tank Size (Gallons)?
- Tank Manufacturer and Model?
- Water Source?
- Well Drillers Name?
- Distance from well to septic (Feet)?
- Waterways?
- Are you installing a leach rock system?
- Are you installing a chamber system?
- Select from one of the approved manufacturers: ARC36 or Infiltrator?
- Number of lines?
- Number of chambers?
- Distance between the trenches on center?
- Total Depth of Trench (feet)?
- Are you installing an engineered system?