

SMALL WASTEWATER (SEPTIC SYSTEM) APPLICATION
FREMONT COUNTY, WYOMING

Step 1: Before any work begins complete and submit the application packet with the correct permit fee : Permit fees: **\$250.00** for replacement systems, **\$275.00** for new systems and **\$300.00** for non-conventional systems, As-built , **\$1,000.00** , Additional inspections, **\$50.00**, payable to:

Fremont County Planning Department
 450 North 2nd Street, Room 360
 Lander, WY 82520

Please allow **2 WEEKS** to process the application. Incomplete applications will delay processing. if you have any questions or need assistance contact the Planning Department at **332-1077** or 1-800-967-2297, ext. 1830 (outside Lander or Riverton), or fax to 332-1177.

Marcel Lopez, Small Wastewater Specialist (332-1830 or 330-4010)
 marcel.lopez@fremontcountywy.gov

Step 2: To insure compliance with State and Fremont County Regulations: plan the layout for your home site, with the following minimum distance requirements in mind:

From

	<u>To Septic Tank</u>	<u>To Leach field</u>
Wells (including neighboring wells)	50'	100'
Open waterway (including streams, lakes or ditches)	50'	50'
Potable water line	25'	25'
Building foundation (without foundation drain)	5'	10'
Building foundation (with foundation drain)	5'	25'
Break in slope greater than 15%	15'	15'
Property line	10'	10'
Septic tank	n/a	10'

Be sure to choose a site where the bottom of the leach field is at least 4 ft. from the high groundwater level and at least 4 ft. from any bedrock or impermeable soil layer. **This will require a backhoe cut.** If this is not possible **you must** notify the Planning Department.

Step 3: Run percolation tests in the area of the proposed leach field **rounding up to the nearest whole number.** Instructions and forms are on pages 5-7 of the application.

Step 4: Prior to construction, you must make an appointment for a site evaluation. During the site evaluation we will provide specific information as to the size and configuration of the leach field, if the percolation test has been done.

Step 5: INSPECTION Prior to backfilling, the system must be inspected by a representative of the Planning Department. A 48-hour advance notice would be appreciated if possible.

IMPORTANT REMINDER: Before undertaking any excavation, contractors and landowners have a duty to call to locate any utilities buried beneath worksites. Public utilities have established a nationwide network. **This is a free public service & it's the law.** In Wyoming this service is called **One Call of Wyoming: (800) 849-2476 or 811.**

NOTICE TO ALL DEVELOPERS, BUILDERS & PROPERTY OWNERS

Fremont County would like to make you aware of more exacting definitions of wetlands resulting from delineation methods by the U.S. Army Corps of Engineers. If you intend to do any construction, dredging, or placing of fill material in waterways or wetlands, contact the Corps of Engineers regarding required approvals under Section 404 of the Clean Water Act. This Act applies rivers, streams, lakes, intermittent streams, isolated water bodies, wetlands or suspected wetlands.

Fremont County does not administer the 404 program, nor requires permits under the 404 program as part of compliance with Fremont County regulations. It is the responsibility of the property owner to apply for all federal permits.

If you have any questions or concerns please contact:

**U.S ARMY CORPS OF ENGINEERS
2232 DEL RANGE BLVD., SUITE 210
CHEYENNE, WY 82009**

PHONE: (307) 772-2300

FAX: (307) 772-2920

Example

Owner(s) Name: <u>John & Becky Smith</u> Mailing Address: <u>123 Washboard Rd.</u> <u>Lander, WY 82520</u> Phone: <u>555-1234</u>	Installer Name: <u>Dave Adams</u> Mailing Address: <u>55 Long Rd.</u> <u>Riverton, WY 82501</u> Phone: <u>555-1122</u>
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1. Physical Address of Property: 101 Fake St.
2. Location of Property: Section 10 T 2N R 3E
3. Subdivision Name: Freeland Estates Lot # 3 Block # N/A
4. Lot Size: _____ ft. by _____ ft., Area: _____ s.f. or 5 1/2 acres
5. Type of Building: single family home (single family home/ mobile home/ office/etc.)
(b) basement, floor drain, garbage disposal, water softener (*check all that apply*)
6. Water Source: _____ community well, private well, _____ cistern, _____ municipal
7. Drain field site conditions: (a) Ground slope: 3 %
(b) Type of soil: silt and clay (sand, silt, clay, gravel, etc.)
(c) Depth to peak groundwater is at least 8 ft.
(d) Depth to impermeable soil/bedrock is at least 8 ft.
8. Septic tank: (a) Size: 1,000 gallons (Minimum 1,000 gal. for 1 to 4 bedrooms. Add 150 gal. for each additional bedroom)
(b) Type of tank: pre-cast concrete (concrete, plastic, etc.)
(c) Manufacturer: The Concrete Place
9. Percolation Rate: 25 mpi (see page 5 for procedure and page 6 for data sheet)
10. Loading Rate: 0.42 gpd/s.f. (locate your percolation rate on the "Loading Rate Table" on page 7 to identify your loading rate)

11. Gallons per day (GPD) produced : 1 Bedroom 150: 2 Bedroom 280: 3 Bedroom 390: 4 Bedroom 470: 5 Bedroom 550 6 Bedroom 630. *The design flow shall be increased by eighty (80) gallons per day for each additional bedroom over six (6). Unfinished basements are to be considered at no less than two (2) additional bedrooms To allow for running taps during freezing conditions, an additional 50 gallons per day must be added to the small wastewater sewage flow for mobile homes.*

I certify that the above described facility has been submitted in accordance with local, county and state statutes, as required, and that said facility shall be constructed as authorized under the provisions specified in Wyoming Water Quality Rules and Regulations, Chapter 25. This application is effective for a period of (1) year maximum from the date of this application

Becky Smith
Signature of Owner

AUG 10, 2016
Date

Owner(s)

Name: _____

Mailing _____

Address: _____

Phone: _____

Installer

Name: _____

Mailing _____

Address: _____

Phone: _____

- 1. Physical Address of Property: _____
- 2. Location of Property: Section _____ T _____ R _____
- 3. Subdivision Name: _____ Lot # _____ Block# _____
- 4. Lot Size: _____ ft. by _____ ft., Area: _____ ft² or _____ acres
- 5. (a) Type of Building: _____ (single family home/ mobile home/ office/ etc.)
 (b) _____ basement, _____ floor drain, _____ garbage disposal, _____ water softener (*check all that apply*)
- 6. Water Source: _____ community well, _____ private well, _____ cistern, _____ municipal
- 7. Drain field site conditions: (a) Ground slope: _____ %
 (b) Type of soil: _____ (sand, silt, clay, gravel, etc.)
 (c) Depth to peak groundwater is at least _____ ft.
 (d) Depth to impermeable soil/bedrock is at least _____ ft.
- 8. Septic tank: (a) Size: _____ gallons (Minimum 1,000 gal. for 1 to 4 bedrooms. Add 150 gal. for each additional bedroom)
 (b) Manufacturer: _____
- 9. Percolation Rate: _____ mpi (See page 5 for procedure and page 6 for data sheet)
- 10. Loading Rate: _____ gpd/s.f. (Locate your percolation rate on the "Loading Rate Table" on page 7)
- 11. Gallons per day (GPD) produced **indicate one: 1 Bedroom 150: 2 Bedroom 280: 3 Bedroom 390: 4 Bedroom 470: 5 Bedroom 550 6 Bedroom 630.** *The design flow shall be increased by eighty (80) gallons per day for each additional bedroom over six (6). Unfinished basements are to be considered at no less than two (2) additional bedrooms*
To allow for running taps during freezing conditions, an additional 50 gallons per day must be added to the small wastewater sewage flow for mobile homes.

I certify that the above described facility has been submitted in accordance with local, county and state statutes, as required, and that said facility shall be constructed as authorized under the provisions specified in Wyoming Water Quality Rules and Regulations, Chapter 25. This application is effective for a period of (1) year maximum from the date of this application

Signature of Owner

Date

Example

12. Drain field size calculations:

$$\begin{array}{r} \text{Wastewater volume} = \underline{630} \text{ gpd} \\ \div \\ \text{Loading Rate} = \underline{0.42} \text{ gpd/s.f.} \end{array} = \underline{1,500} \text{ ft}^2$$

13. Drain field layout:

(a) Type of system: (check one)

Rock and perforated pipe **Trench**

Rock and perforated pipe **Bed**

Chamber Trench system

Chamber Bed system

(b) Request the appropriate design sheet during the pre-construction site evaluation with the Planning Department staff.

Construction Requirements

SEPTIC TANK

1. Tank design must comply with Wyoming DEQ standards.
2. The septic tank must contain baffles and/or “T’s” that extend into the middle third of the liquid depth. A minimum 20” man way must be installed for each compartment of the tank. The riser from the access opening shall terminate at a maximum of six (6) inches below the ground surface. Riser covers terminating above grade shall have an approved locking device.
3. Tank must be set on top of compacted or undisturbed soil.

BUILDING SEWER

1. All solid pipe between the house and the tank and between the tank and field must have a minimum slope of 1/4” per foot (2%) for a 4” pipe.
2. The septic tank inlet and outlet pipes shall be 4” schedule 40 PVC and shall extend past the septic tank excavation to undisturbed soil.
3. Cleanouts shall be provided at least every 100 ft. and up grade of any change in alignment greater than 22.5 degrees. A cleanout just outside the house is required, regardless of the distance to the tank.

LEACHFIELD

1. Pipe and Stone Systems-A minimum of 6” of washed stone under the pipe and a minimum of 2” of washed stone over the pipe is required. The stone must be covered by filter cloth or 2” of straw before backfilling. Do not use plastic sheeting or tar paper.
2. The bottom of all beds and trenches must be level.
3. A minimum of 12” of backfill is required to cover the field.
4. The field must be 15 ft. from the break in slope if the slope is steeper than 20%.

12. Minimum square feet of infiltrative surface needed:

$$\begin{aligned} \text{Wastewater volume} &= \text{_____ gpd} \\ \div & \qquad \qquad \qquad = \text{_____} \text{ ft}^2 \\ \text{Loading Rate} &= \text{_____ gpd/ft}^2 \end{aligned}$$

For Office Use Only

13. Drain field layout:

(a) Type of system: (check one)

- Rock and perforated pipe **Trench**
- Rock and perforated pipe **Bed**
- Chamber Trench** system
- Chamber Bed** system

(b) Request the appropriate design sheet during the pre-construction site evaluation with the Planning Department staff.

Construction Requirements

SEPTIC TANK

1. Tank design must comply with Wyoming DEQ standards.
2. The septic tank must contain baffles and/or “T’s” that extend into the middle third of the liquid depth. A minimum 20” man way must be installed for each compartment of the tank. The riser from the access opening shall terminate at a maximum of six (6) inches below the ground surface. Riser covers terminating above grade shall have an approved locking device.
3. Tank must be set on top of compacted or undisturbed soil.

BUILDING SEWER

1. All solid pipe between the house and the tank and between the tank and field must have a minimum slope of ¼” per foot (2%) for a 4” pipe.
2. The septic tank inlet and outlet pipes shall be 4” schedule 40 PVC and shall extend past the septic tank excavation to undisturbed soil.
3. Cleanouts shall be provided at least every 100 ft. and up grade of any change in alignment greater than 22.5 degrees. A cleanout just outside the house is required, regardless of the distance to the tank.

LEACHFIELD

1. Pipe and Stone Systems-A minimum of 6” of washed stone under the pipe and a minimum of 2” of washed stone over the pipe is required. The stone must be covered by filter cloth or 2” of straw before backfilling. Do not use plastic sheeting or tar paper.
2. The bottom of all beds and trenches must be level.
3. A minimum of 12” of backfill is required to cover the field.
4. The field must be 15 ft. from the break in slope if the slope is steeper than 20%.

PLAN SHEET

Make a drawing of your property, including:

1. property lines
2. all buildings
3. all wells within 200'
4. drinking water lines
5. streams, ditches, surface bodies of water
6. breaks in slope greater than 15%
7. septic tank
8. leach field
9. a NORTH ARROW
10. the road you will use to access the house
11. the driveway
12. an area for future installation of a REPLACEMENT LEACHFIELD

Show the relative distances of these features. See table below for minimum distance requirements.

<u>From</u>	<u>To Septic Tank</u>	<u>To Leach field</u>
Wells	50'	100'
Open waterway	50'	50'
Potable water line	25'	25'
Building foundation (without fndn. drain)	5'	10'
Building foundation (with fndn. drain)	5'	25'
Break in slope	15'	15'
Property line	10'	10'
Septic tank	N/A	10'

Reviewed by:

Date of Authorization:

Percolation Test Procedure

Instructions

General Information - Complete the general information areas of sections 1, 2, and 3, at the top of the data sheet.

Location of the percolation test holes— The percolation (perc) test holes shall be placed uniformly over the proposed soil absorption (leach field) site. **A minimum of (3) test holes are required.** More than 3 can be used if desired.

Test hole preparation— Test holes that are 12 inches in diameter shall be dug or bored to the proposed depth of the leachfield (typical depths are 30 to 42 inches). The side walls shall be vertical and a natural soil surface (one which is not smeared from digging) shall be exposed by scraping the sides and bottom of the test hole with a sharp pointed instrument. Any loose material shall be removed from the test hole and several inches of coarse sand or gravel placed in the bottom of the test hole in order to prevent scouring and sealing before the water is poured in.

Presoaking— **PRESOAKING IS ABSOLUTELY REQUIRED** in order to get valid percolation test results. The purpose of presoaking is to have the water conditions in the soil reach a stable condition similar to what exists during continual wastewater application in a leach field. The minimum time of presoaking varies with soil type and soil conditions, but must be sufficiently long so that the water seeps away at a steady rate. The following presoaking instructions are usually sufficient to establish the proper soil moisture conditions.

Fill each hole with clear water to a level at least eighteen (18) inches above the gravel or coarse sand. If the eighteen (18) inches of water seeps away in eighteen (18) minutes or less, add eighteen (18) inches of water a second time. If the second filling of eighteen (18) inches of water seeps away in eighteen (18) minutes or less, this indicates the soil is sandy and is excessively permeable. The soil absorption system shall meet the requirements of Chapter III of the Fremont County Small Wastewater Regulations, Section 8 (c).

If either the first or second fillings of eighteen (18) inches of water does not seep away in ninety (90) minutes, eighteen (18) inches of water must be maintained in the hole for at least four (4) hours to presoak the test hole. After the four (4) hours of water contact time, wait at least twelve (12) hours before starting the percolation rate measurement.

Percolation Rate Measurement

Fill each test hole with twelve (12) inches of water and allow the soil to rehydrate for fifteen (15) minutes prior to any measurements. Establish a fixed reference point to measure the incremental water level drop at constant time intervals. The water level drop should be measured to the nearest $\frac{1}{8}$ of an inch and the minimum time interval is ten (10) minutes. Refill the test hole to twelve (12) inches above the gravel before starting the measurements. Continue to measure the incremental water level drop at a constant time interval until a consistent incremental water level drop is achieved. A consistent water level drop is achieved when three (3) consecutive water level drops are within $\frac{1}{8}$ inches of each other. Before the water level drops below one (1) inch above the gravel, refill the test hole to twelve (12) inches and continue to measure the incremental water level drop. The percolation rate is calculated for each hole using the following formula: $\text{Time Interval (Minutes)} = \text{Final Water Level Drop (inches)} \times \text{Percolation Rate (minutes/inch)}$. If only three to five percolation tests are performed, the design percolation rate for the absorption system is the largest rate from all the holes tested. If six or more percolation tests are performed, the design percolation rate for the absorption system is the average of all the holes tested as determined by the above formula.

Perc Rate Calculation— After the water level drop rates have stabilized in all of the test holes, transfer the last water level drop measurement to the final drop row in the data table. To calculate the perc rate for each test hole, divide the time interval by the final drop rounding up to the nearest whole number. This is the perc rate in minutes per inch (mpi). Depending on how many test holes were used, determine the design percolation rate using either 3a or 3b at the bottom of the percolation test results data sheet.

An Example test data sheet is provided on the back of these instructions to demonstrate how to record the data.

PERCOLATION TEST RESULTS

1. Performed by: Mike Plumber Test date(s): 6-23 & 6-24,99
 Credentials or status of tester: _____
 (Owner, Contractor, Installer, engineer, geologist, sanitarian, soil scientist, or other)
 2. The **time interval (ti)** between water level measurements was: minutes.
 3. **TEST DATA:** The test holes were **PRESOAKED** for: Hours, or X over-night.

Test Hole # is	<u>1</u>	<u>2</u>	<u>3</u>
Hole depth (inches)=	<u>34"</u>	<u>38"</u>	<u>37"</u>
Interval Elapsed	Water	Water	Water
Number Time	Level/Drop	Level/Drop	Level/Drop
Drop Level/Drop	Level/Drop	Level/Drop	Level/Drop
Start =	<u>0min</u>	<u>17"</u>	<u>17"</u>
1	<u>10</u>	<u>18 1/4</u>	<u>18 1/4</u>
2	<u>20</u>	<u>19 1/4</u>	<u>19 1/4</u>
3	<u>30</u>	<u>20</u>	<u>20</u>
4	<u>40</u>	<u>20 5/8</u>	<u>20 5/8</u>
5	<u>50</u>	<u>15</u>	<u>15</u>
6	<u>60</u>	<u>15 1/2</u>	<u>15 1/2</u>
7	<u>70</u>	<u>15 7/8</u>	<u>15 7/8</u>
8	<u>80</u>	<u>16 3/8</u>	<u>16 3/8</u>

Water level drop
Between intervals

The actual water level below
The top of the test hole

Refill hole if needed and re-measure
Actual water level

Continue the test until 3 consecutive
"drops" are the same to within
1/8 inch total variation

Final Drop
(NOT TOTAL) = 1/2 _____ _____

Perc Rate(mpi) is:
 [ti/Final drop]=10 1/2= 20.0mpi _____ _____

A. If **6 or more holes** were tested, the **average perc rate was:**NA mpi or

PERCOLATION TEST RESULTS

1. Performed by: _____ Test date(s): _____
 Credentials or status of tester: _____
 (Owner, Contractor, Installer, engineer, geologist, sanitarian, soil scientist, or other)

2. The **time interval (ti)** between water level measurements was: _____ minutes.

3. **TEST DATA:** The test holes were **PRESOAKED**

for: _____ Hours, or _____ overnight.

Test Hole # is _____

Hole depth (inches)= _____

Interval Number	Elapsed Time	Water Level/Drop	Water Level/Drop	Water Level/Drop
Start =	0min	_____	_____	_____
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____

Final Drop

(NOT TOTAL) = _____

Perc Rate(mpi) is:

[ti/Final drop]=

_____ **mpi**

A. If **6 or more holes** were tested, the **average perc rate** was: _____ mpi or

B. If **3 to 5 holes** were tested, the **slowest perc rate** (largest number) was: _____ mpi

LOADING RATE TABLE

Percolation Rate (mpi)	Loading Rate (gpd/ft ²)	Percolation Rate (mpi)	Loading Rate (gpd/ft ²)
5	0.80	21	0.45
6	0.75	22	1.44
7	0.71	23-24	0.43
8	0.68	25	0.42
9	0.65	26-27	0.41
10	0.62	28-29	0.40
11	0.60	30-31	0.39
12	0.58	32-33	0.38
13	0.56	34-35	0.37
14	0.54	36-37	0.36
15	0.52	38-40	0.35
16	0.50	41-43	0.34
17	0.49	44-46	0.33
18	0.48	47-50	0.32
19	0.47	51-55	0.31
20	0.46	56-60	0.30

NOTE- If the perc rate for your site is less than 5 mpi or greater than 60 mpi, you cannot use this generic application package. You must hire a Wyoming Registered Professional Engineer and submit an application customized for your specific site conditions.