



Pembina County Public Health  
 301 Dakota Street West #2  
 Cavalier, North Dakota 58220  
 Phone: (701) 265-4248  
 Fax: (701) 265-5193  
<https://www.pembinacountynd.gov>



PCPH-Internal.use.only:

Date received: \_\_\_\_\_  
 From: \_\_\_\_\_  
 Amount: \_\_\_\_\_  
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 PERMIT # \_\_\_\_\_

**APPLICATION FOR PERMIT**  
 for the construction/alteration  
 of an on-site sewer system.

**Onsite Sewer Permit Fee: \$250**  
**Tank Permit Fee: \$20**  
 (Payable at the time of application)  
**(PERMIT FEE IS NON-REFUNDABLE)**

**ALL UNDERGROUND LINES MUST BE MARKED**  
**PRIOR TO SITE EVALUATION. Please call 811**



Fill out completely and return to PCPH. **\*THIS IS NOT A PERMIT.** Permit will be issued upon approval by the adopting authority.

**Homeowner/Property Owner Portion:**

County \_\_\_\_\_ Township (Name) \_\_\_\_\_ Size/Acres \_\_\_\_\_

Legal description (Township, Range, Section) \_\_\_\_\_

GPS coordinates (Latitude Longitude in Deg., Min., Sec.) \_\_\_\_\_

Subdivision (if applicable) \_\_\_\_\_ Lot Size \_\_\_\_\_ Block/Lot # \_\_\_\_\_

Installer/Contractor: \_\_\_\_\_

Property owner(s)/applicant's name: \_\_\_\_\_

Physical address of site: \_\_\_\_\_

Current mailing address of owner: \_\_\_\_\_

Phone number(s): \_\_\_\_\_ Email address: \_\_\_\_\_

**Purpose:** New Installation \_\_\_ or Alteration/Repair (tank/drain field) describe: \_\_\_\_\_

Existing/future well(s) on property or within 200 feet? (Y/N) \_\_\_\_\_ Depth of well(s) \_\_\_\_\_ Distance to well(s)? \_\_\_\_\_

Residential system? (Y/N) \_\_\_ Is there a basement?(Y/N) \_\_\_ List plumbing fixtures in basement if any: \_\_\_\_\_

Total number of bedrooms \_\_\_ Is there space to add bedrooms?(Y/N) \_\_\_ If yes, describe: \_\_\_\_\_

Pool, hot tub, or whirlpool tub?(Y/N) \_\_\_ If yes, describe including size: \_\_\_\_\_ Garbage disposal?(Y/N) \_\_\_

Commercial system? (Y/N) \_\_\_ Number of bedrooms: \_\_\_\_\_ Employees: \_\_\_\_\_ Showers: \_\_\_\_\_ Floor drains: \_\_\_\_\_

Number of floors \_\_\_\_\_ Square feet per floor \_\_\_\_\_

Describe any alteration(s) to natural soils at site: \_\_\_\_\_

**I certify that all the information provided on this form is true and correct to the best of my knowledge.**

\_\_\_\_\_  
 Applicant (Print and Signature)

Date \_\_\_ / \_\_\_ / \_\_\_



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**INSTALLER PORTION: Proposed System Design – DRAW SITE PLAN to include A-F:**

\*Please consider future pumping, repairs, setbacks, and additions. Additionally, also consider alternate treatment area and/or future connections to sanitary sewer.

<b>A</b>	Property Boundaries
<b>B</b>	Location and depth of existing, proposed, neighboring wells
<b>C</b>	Location of water bodies
<b>D</b>	Location of proposed or existing buildings
<b>E</b>	Location of existing or proposed driveway or buried utilities
<b>F</b>	Indicate area in flood plain

Feature	Sewage tank, Holding tank (feet)		Soil Treatment Area and Distribution Device (feet)	
	Min	Provided	Min	Provided
Well < 100 feet deep	100		100	
Well > 100 feet deep	50		50	
Any other water supply well or buried water suction pipe	50		50	
Buried pipe distributing water under pressure	10		10	
Surface Water bodies – from ordinary high-water mark	100		100	
Buildings	10		20	
Property lines	10		10	

Printed Name of Designer:
Business Name:
Date: / /
Physical Address of site:

Proposed Design Sketch:

Property Owner Name: \_\_\_\_\_



\*Please indicate all system components, all features related to A-G, easements, and setbacks. Contractor is responsible for meeting all setbacks. Additionally, please continue to BACKSIDE OF PAGE and fill in SYSTEM COMPONENT SPECIFICATION SHEET.



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# System Component Specification Sheet

**\*PLEASE FILL OUT ALL APPLICABLE SECTIONS**

## Materials Information:

<b>Holding Tank(s):</b>	Number: _____	Capacity: _____	Brand/Model: _____
<b>Septic Tanks(s):</b>	Number: _____	Capacity: _____	Brand/Model: _____
<b>Distribution Boxes:</b>	Number: _____	Material: _____	Brand/Model: _____
<b>Drop Boxes</b>	Number: _____	Material: _____	Brand/Model: _____
<b>Grinder Pump:</b>	Max/Min Flow (GPM): _____	Max Head (GPM): _____	Brand/Model: _____
<b>Pump Chamber:</b>	Max/Min Flow (GPM): _____	Max Head (GPM): _____	Brand/Model: _____
<b>Piping: (40,80,120)</b> <b>ASTM D1785</b> <b>Compliant</b>	Schedule: _____	Brand/Model: _____	

## Absorption Field Type/Length: 110' MAX

<input type="checkbox"/>	<b>Chambers:</b> _____ <b>HEIGHT</b> _____ <b>LENGTH</b>
<input type="checkbox"/>	<b>Gravel-less:</b> _____ <b>LF</b>
<input type="checkbox"/>	<b>Rock Trench:</b> _____ <b>LF</b>
<input type="checkbox"/>	<b>Mound:</b> _____ <b>AREA</b>
<input type="checkbox"/>	<b>Other:</b> _____ <b>LF</b>

### Important Construction Considerations

- The proposed area for an OSTs shall be protected from disturbance, compaction, or other damage by an effective method.
- A mechanical warning system shall be installed to warn of pump failure.
- Trench shall not have a depth greater than 4 feet
- In sandy soils, a minimum of 36 inches of vertical separation shall be required.

<b>For Chamber or Gravel-less Trenches:</b>	Number of trenches: _____ Width: _____ Length: _____ Inspection pipe on each run? Y/N: _____ Depth of backfill? _____ in
<b>For Rock Trench:</b>	Rock size: _____ Cleaned/washed rock? Y/N: _____ Inspection pipe on each run? Y/N: _____ Depth of backfill? _____ in
<b>For Mounds:</b>  • See Mound Design Sheet	Dimensions: Length: _____ Width: _____ Depth: _____

Must Notify 48 hrs. before  
Construction. Ph: 707-787-8109

## **PERMIT APPROVAL INFORMATION**

\*Department use only\*

DATE ISSUED

/ /

APPROVING SIGNATURE

**\*THIS PERMIT IS VALID FOR ONE (1) YEAR FROM THE DATE ISSUED. \***



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# INSPECTOR PORTION: Site and Soil Evaluation

**Soil Borings** – where soil borings are required, they shall be made in compliance with Code (Appendix A, Section A #1-3)  
**Percolation Tests** – where percolation tests are required, they shall be made in compliance with Code (Appendix A, Section B #1-7)

Soil Type (Indicate depth of Redox Features "X")

Depth:	
Depth:	
Depth:	
Depth:	
Depth:	
Depth:	
Depth:	
Depth:	

**Depth to Limiting Factor:**

\_\_\_\_\_ (ft/in)

**Max Trench Bottom Depth:**

\_\_\_\_\_ (ft/in)

**Soil Sizing Factor:**

\_\_\_\_\_ (ft<sup>2</sup>/gpd)

Percolation Rate:

\_\_\_\_\_ min./inch

## D-15 Soil Characteristics & SSF

Perc Rate mpi	Soil Texture	Soil Sizing Factors ft <sup>2</sup> /gpd	Separation from limiting factors
< 0.1 **	Coarse sand	0.83	36 inches
0.1- 5*	Medium sand Loamy sand	0.83	
0.1- 5*	Fine sand	1.67	
6 - 15*	Sandy loam	1.27	
16 - 30	Loam	1.67	24 inches
31 - 45	Silt loam, silt	2.00	
46 - 60	Clay loam, sandy clay or silty clay	2.20	36 inches 24 inches
61 - 120***	Clay, sandy or silty clay	4.20	24/36 inches 24 inches
>120****			

**Site Sketch** – Indicate buildings, drain field, wells and any other identifiers.

Property Owner Name: \_\_\_\_\_



Name/Date: \_\_\_\_\_

\*\*\*COMPLETE DESIGN CALCULATIONS ON BACKSIDE OF SHEET →



# INSPECTOR PORTION: Site and Soil Evaluation (Cont.)

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Minimum Septic Tank Capacity in Gallons		
Number of Bedrooms	Minimum Capacity	Capacity with GD
3 or less	1000	1500
4 to 5	1500	2250
6 to 7	2000	3000
8 to 9	3750	3750

Estimated Sewage Flows in GPD	
Number of Bedrooms	GPD
2	300
3	450
4	600
5	750
6	900
7	1050
8	1200
9	1350

Minimum Tank Size: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Feature	Sewage tank, Holding tank (feet)		Soil Treatment Area and Distribution Device (feet)	
	Min	Provided	Min	Provided
Well < 100 feet deep	100		100	
Well > 100 feet deep	50		50	
Any other water supply well or buried water suction pipe	50		50	
Buried pipe distributing water under pressure	10		10	
Surface Water bodies – from ordinary high-water mark	100		100	
Buildings	10		20	
Property lines	10		10	

**TRENCH OR BED BOTTOM AREA:**

For trenches with 6 inches of sidewall beneath the pipe or chamber:

$$A \times H = \text{FLOW gpd} \times \text{SSF ft/gpd} = \text{AREA ft}^2$$

**FOR TRENCHES OR PRESSURE BEDS THE LINEAL FEET REQUIRED = (REQUIRED SQUARE FOOTAGE / WIDTH OF BOTTOM OF TRENCH OR BED)**

$$\text{AREA ft}^2 / \text{TW ft} = \text{LF}$$

**NOTES/CALCULATIONS**



## Final inspection requirements for On-site Sewage Treatment Systems

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**\*As-built shall be provided by Contractor**

The applicant or contractor shall call when all components of the septic system are installed and complete except for the final cover of soil over the system. The sewer line from the house to the septic tank does not have to be connected or installed.

Phone: 701-787-8109

### **Septic Tank:**

- All tanks shall be concrete, fiberglass, or plastic and all should be watertight regardless of material
- Tanks susceptible to freezing shall be insulated.
- There shall be 1 or more manholes, at least 20 inches least dimension and located within 6 feet of all walls of the tank. All manhole covers shall be at a minimum brought 6 inches above the finished grade.
- Covers shall be safely secured by being locked, bolted or screwed, having a weight of at least 95 pounds, or other methods as approved by the adopting authority to prevent unauthorized entry.
- All inspection pipes shall be at minimum brought 6 inches above the finished grade
- Where more than 1 tank is used to obtain the required liquid volume, the tanks shall be connected in series
- The first tank shall be no smaller than any subsequent tanks in series.
- The outlet/supply pipe extending from the septic tank to the undisturbed soil beyond the tank shall meet the strength requirements of the American Society for Testing and Materials (ASTM), schedule 40 plastic pipe. Also, the pipe should not be closer than 6 inches from final grade.

### **Outlet line:**

- For both gravity and pressure distribution, the minimum slope is 1% and frost protection shall be employed for both distribution systems.
- The size of the sewage effluent dose shall be determined by design of the soil treatment unit but in no case shall the dosing chamber be sized to provide a dose of less than 75 gallons.
- For gravity distribution, the pump shall discharge at least 10 gallons per minute but no more than 45 gallons per minute. For pressure distribution, see Pembina County On-Site Treatments System requirements document, Appendix B Design Standards, pressure distribution.

### **Soil Treatment Area:**

- Trenches installed to specifications indicated on approved permit, sufficient cover, and effective depth, not exceeding maximum permitted depth, minimum separation between lines.
- The minimum depth of cover over the crown of distribution pipes shall be 12 inches of soil. The maximum depth of cover over the crown distribution pipes shall be no more than 36 inches.
- Each trench shall have an inspection pipe that is 4 inches in diameter.
- There shall be a layer of at least 6 inches but no more than 24 inches of filter materials on the bottom of the trenches.

### **General Considerations:**

- Every OSTS installed, and every alteration, extension, and/or repair to any system made after the effective date of this Resolution shall conform to the standards herein.
- The owner, building contractor, plumbing contractor, and OSTS installer are jointly responsible for compliance with these regulations.
- The minimum lot size in which a new OSTS can be installed shall be 1 acre.

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# As Built/Final Inspection

**\*To be completed by  
Installer/Inspector**

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Note any alterations from approved design:

\_\_\_\_\_

\_\_\_\_\_

Scale Drawing:

Property Owner Name: \_\_\_\_\_



Observed Trench Length(s) and Depths

Marked: #1: \_\_\_ / \_\_\_ ft #2: \_\_\_ / \_\_\_ ft

#3: \_\_\_ / \_\_\_ ft #4: \_\_\_ / \_\_\_ ft

Depth of Backfill: \_\_\_\_\_

Trench Spacing  $\geq$  6ft on Center Y / N

Piping Observed Before Backfill Y / N

Inspection Ports on Each Run Y / N

Photos Taken Y / N

Comments:

Feature

Sewage tank,  
Holding tank  
(feet)

Soil Treatment  
Area and  
Distribution  
Device (feet)

Min

Actual

Min

Actual

Well < 100 feet deep

100

100

Well > 100 feet deep

50

50

Any other water supply well  
or buried water suction pipe

50

50

Buried pipe distributing  
water under pressure

10

10

Surface Water bodies – from  
ordinary high-water mark

100

100

Buildings

10

20

Property lines

10

10

Use back of sheet for additional trench measurements and comments.



Signature Block: \_\_\_\_\_

- I hereby certify, as the installer, that the On-site Sewage Treatment System (OSTS) was installed in accordance with Pembina County Public Health Septic Code following the materials and specifications provided in the approved permit. Any alterations listed above.
- The Pembina County Public Health requirements associated with this On-site Sewage Treatment System (OSTS) design, the observed components, and the setbacks meet the code at the time of installation.