

DEM OWTS installer pre-exam briefing session

OWT 100

NEOWTP



OWT 100: Conventional Onsite Wastewater Treatment Basics for Installers

DEM OWTS Installer License Exam Preparation





**Jacqueline Kendrick-Tedesco, EIT
Environmental Engineer III**

Onsite Wastewater Treatment Systems Program

235 Promenade Street

Providence, RI 02908

Tel. (401) 222-3961

Email: Jacqueline.Tedesco@dem.ri.gov

www.dem.ri.gov/septic

OWTS Permitting Program Overview

DEM Provides Regulatory Oversight in Three Areas

- **Site Suitability**: A preliminary stage which assesses the suitability of a parcel of land for on-site sewage treatment
- **Treatment System Design Review**: To review and approve a design's compliance with the OWTS Rules
- **System Installation**: Field inspections are conducted by DEM staff during the key stages of system siting and installation

Angelone, Thomas Senior Environmental Scientist, Permitting & Subdivision Suitability Determinations	401-537-4198
Brock, Ryan Environmental Engineering Associate, Permitting	401-537-4205
DeRiso, Andrew Senior Environmental Scientist, Field Inspections & System Repair Permitting	401-537-4218
Duranleau, David Senior Environmental Scientist, Field Inspections & System Repair Permitting	401-537-4223
Ferreira, Kyle Senior Environmental Scientist, Permitting & System Suitability Determinations	401-537-4226
Poole, Stephanie Environmental Scientist, Permitting	401-537-4253
Pittman, Alan Senior Environmental Scientist, Field Inspections & System Repair Permitting	401-537-4152
Sorensen, Karen Chief Implementation Aide OWTS Administrative Support	401-537-4169
Kendrick-Tedesco, Jacqueline Principal Environmental Engineer, Permitting, Designer/Installer Licensing	401-537-4185
Bouchard, Jessica Applications Coordinator, OWTS Administrative Support	401-537-4204
Sutter, Christian Senior Environmental Scientist, Field Inspections & System Repair Permitting	401-537-4171

DEM OWTS Program Contacts

www.dem.ri.gov/septic

Email: DEM.OWTS@dem.ri.gov

**Phone: (401) 222 – 3961
(note phone changes)**

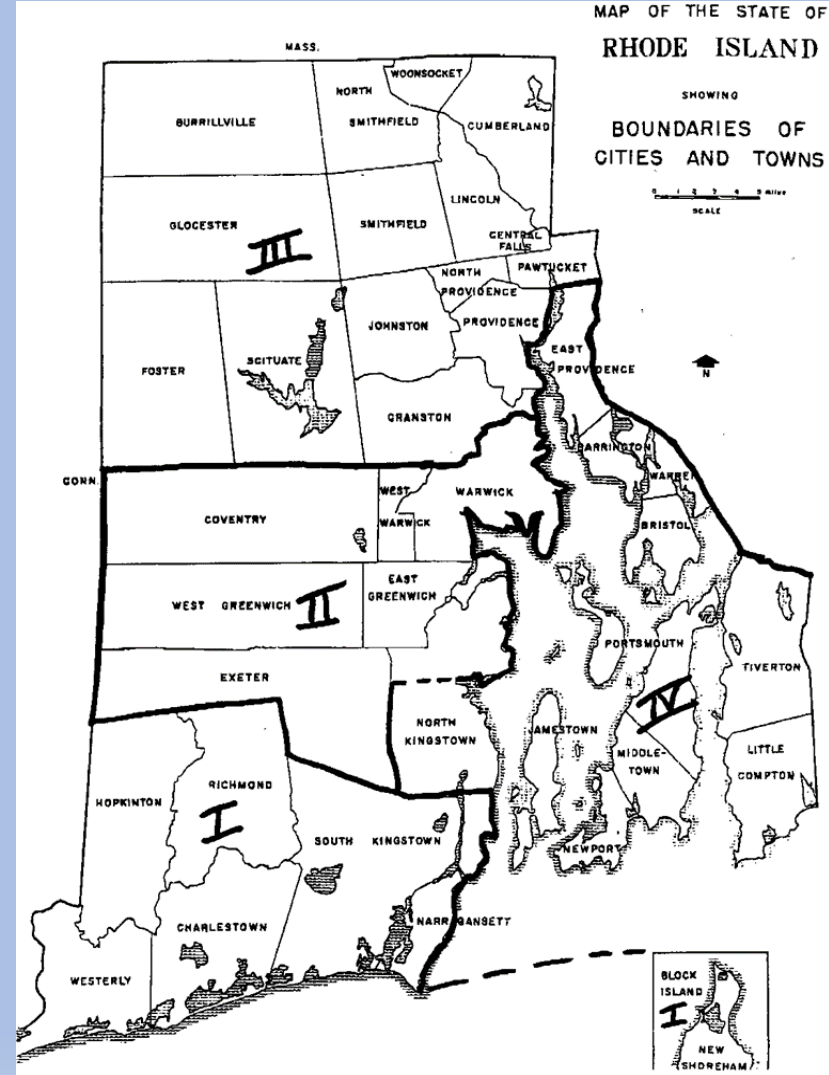
Field Inspection Districts

District I – Christian Sutter

District II – David Duranleau

District III – Alan Pittman

District IV – Andy DeRiso



- The OWTS Rules Establish Standards for Locating, Designing, Construction and Maintenance of Septic Systems in RI
- Be familiar with these for the exam!
- Available on web: www.dem.ri.gov/septic
- Updated 12/22

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources

**Rules Establishing Minimum Standards Relating to
Location, Design, Construction and Maintenance of Onsite Wastewater
Treatment Systems**



November 25, 2018

OWTS Construction Permit Application Types

- **New Building Construction** (New Construction/ Adding 2 or More Bedrooms to Existing Home/ $>25\%$ Increase in Flow for Commercial)
- **Alteration** (Adding 1 Bedroom to Existing Home/ $\leq 25\%$ Increase in Flow for Commercial)
- **Repair** (No Change of Use/Design Flow)
- **Suitability Determination** (Evaluation of Existing OWTS)
- **Subdivision Suitability** (Needed for Subdivision Approval by Cities and Towns)

OWTS Construction Design and Installation Permitting Process

DEM Approved OWTS Construction Permit Application

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT ONSITE WASTEWATER TREATMENT SYSTEM CONSTRUCTION PERMIT www.dem.ri.gov/septic		FOR RIDEM USE ONLY
APPLICATION No. <u>1911-0536</u>	DATE RECEIVED <u>5-3-19</u>	AMOUNT RECEIVED \$ <u>100⁰⁰</u>
		CHECK # <u>4479</u> NOTE <u>014</u>
TYPE OF APPLICATION (CHECK ALL THAT APPLY)		CERTIFICATION
<input type="checkbox"/> NEW BUILDING CONSTRUCTION <input type="checkbox"/> ALTERATION <input checked="" type="checkbox"/> REPAIR <input type="checkbox"/> TRANSFER	<input type="checkbox"/> A/E TECHNOLOGY TYPE <input type="checkbox"/> VARIANCE <input type="checkbox"/> REDESIGN <input type="checkbox"/> JOINT OWTS / WETLANDS PD	I, <u>GLEN SKURKA</u> (print), the undersigned licensed OWTS designer, certify that I prepared this application and accompanying forms, submittals, plans and sketches in accordance with the RULES of the RIDEM pertaining to OWTS and that all the information provided on this application and accompanying forms, submittals, plans and sketches is true and accurate.
SITE INFORMATION		Designer's Signature <u>Glen Skurka</u> License # <u>D-1159</u> Designer's Email <u>GLEN@D-AMBRA.COM</u> Phone # <u>486-7463</u> Business/Company Name <u>T.H. SKURKA</u>
121 WIDOW SWEETS RD. EXETER 49 NO. STREET CITY/TOWN POLE # PLAT NUMBER <u>9-1</u> LOT NUMBER <u>8</u> SUBDIVISION LOT NUMBER <u>-</u> LOT SIZE <u>4.5</u> SF/ACRES SUBDIVISION NAME <u>-</u> SUBDIVISION SITE SUITABILITY CERTIFICATION # <u>-</u>		I certify that a) I am the owner of the property indicated under the site information on this application, b) I will hire a licensed OWTS installer to install the system proposed herein, c) the system will be installed in strict accordance with this application, d) I will hire and retain the licensed OWTS designer of record to witness and inspect the installation of the system, e) I assume all responsibility for the truth and accuracy of this application and all liability and responsibility for any improper installations of the system on this site and agree to hold the RIDEM harmless from any and all claims relating whatsoever to the system. In the case of a transfer application, I acknowledge that the permit application and plans previously approved and accompanying this application are the operative documents subject to notification.
OWNER INFORMATION		Owner's Phone Number <u>401</u> Owner's Email <u>lgarrn</u> Owner's Signature <u>James A. Garrn</u>
GRANN JOHN W. LAST NAME FIRST NAME M.I. 121 WIDOW SWEETS RD. EXETER 02822 NO. STREET CITY/TOWN ZIP CODE		PERMIT APPROVAL SECTION: DO NOT WRITE BELOW THIS LINE Based upon the representations of the owner and the owner's agents, including the representations of the owner's OWTS designer, and the truth and accuracy of all information submitted, this application for an OWTS is hereby approved. The RIDEM assumes no responsibility or liability for the future safe operation or maintenance of the aforesaid system, of the fitness or suitability of this system to this site, nor does it assume any responsibility for the accuracy and truth of the owner's, or the owner's agent's representations. This approval is subject to future suspension or revocation in the event that subsequent examination reveals any data indicated on any application, form, submittal, plan or sketch to be incorrect, or not in compliance with the RULES or any conditions at the site are such that the approved design is not in accordance with the RULES, or in the event that the system discharges inadequately treated wastewater to waters of the State or fails to operate satisfactorily in any other manner.
RIDEM APPLICATION HISTORY		IMPORTANT: Additional terms of approval as circled. <input checked="" type="checkbox"/> Bottom of leaching area excavation must be inspected by the RIDEM prior to placement of any gravel or stone. <input checked="" type="checkbox"/> System installation must be inspected by RIDEM prior to covering any component of the system with backfill. <input type="checkbox"/> Applicant shall comply with all requirements, conditions and stipulations of variances approved on <input type="checkbox"/> Joint Permit. Designer of record must contact RIDEM prior to start of any site construction. <input type="checkbox"/> A/E Technology: additional installation, operation or maintenance requirements may apply (see A/E Technology Certification). <input type="checkbox"/> Copy of this form and Operation/Maintenance contract must be filed in land evidence records prior to conformance. <input type="checkbox"/> Proposed construction falls within "Coastal Zone". Contact Rhode Island Coastal Resources Management Council. <input checked="" type="checkbox"/> Proper erosion and sedimentation controls must be installed prior to start of construction. <input type="checkbox"/> Transfer. See original permit for all applicable conditions. <input type="checkbox"/> Other
PREVIOUS SITE TESTING <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO APPLICATION # <u>7611-063</u> DEPTH TO APPROVED WATER TABLE <u>5.5'</u> HOW DETERMINED <u>SEV</u> TEST HOLE # <u>1</u> DATE EXCAVATED <u>4/17/19</u> WETLANDS within 200' OF OWTS <input type="checkbox"/> YES <input type="checkbox"/> NO WETLAND DETERMINATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO RIDEM FILE # <u>-</u> DATE <u>-/-/-</u> LARGE SYSTEM <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO OCI FILE # IF APPLICABLE <u>-</u>		Vent req'd when cover exceeds 18"
DESIGN INFORMATION		Signature of RIDEM Official <u>[Signature]</u> Date of Approval <u>5-7-19</u> Date of Expiration <u>5-7-20</u>
BUILDING USE: <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Other WATER SUPPLY: <input type="checkbox"/> public water <input type="checkbox"/> public well <input checked="" type="checkbox"/> private well # OF DESIGN UNITS <u>2-BR</u> UNIT DESIGN FLOW <u>115</u> gallons per <u>BR</u> (unit) TOTAL DAILY FLOW <u>230</u> gallons TANK SIZE <u>1000</u> gallons DESIGN LOADING RATE <u>0.52</u> gpd/sf MINIMUM REQUIRED LEACHFIELD AREA <u>442.3</u> square feet LEACHFIELD TYPE <u>ELVEN DRAIN</u> TOTAL AREA OF LEACHFIELD PROVIDED <u>448</u> square feet		

DEM SEE INSTRUCTIONS ON REVERSE SIDE

DEM Approved Design Plan and Details

Pre-cast Septic Tank, 3000 Gallon 2 Compartment (5.1 Tons)

ASBESTOS FREE PRECAST OF CONCRETE

Zabel AsBio Residential Septic Tank Effluent Filter

Pre-cast Distribution Box (DBs)

70 GAL. PRE-CAST OF CONCRETE

Design Calculations

- DESIGN FLOW = 2.0 GPM (100 GPD) HOME # 113 GAL/PM = 2.0 GPM
- DESIGN FLOW = 2.0 GPM
- DESIGN FLOW = 2.0 GPM
- DESIGN FLOW = 2.0 GPM
- DESIGN FLOW = 2.0 GPM

Soil Specifications

Soil: (SPT) 4.7/17.4

Cross-Section

Treatment System Profile

General Notes

- INSTALLATION BY OTHER CONTRACTORS SHALL BE AT THEIR OWNERS RISK. CONTRACTOR SHALL VERIFY ALL CONDITIONS ARE AS SHOWN ON THESE PLANS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LOCAL AND STATE REGULATIONS AND PERMITS.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND UTILITIES.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES AND STRUCTURES.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRIVEWAYS AND PATHS.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING LANDSCAPE AND PLANTING.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING FENCES AND BARRIERS.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SIGNAGE AND MARKINGS.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING RECORDS AND DOCUMENTATION.
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Construction Notes

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LOCAL AND STATE REGULATIONS AND PERMITS.
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Vicinity Plan

Sequence of Construction

- EXISTING UTILITIES AND STRUCTURES TO REMAIN.
- EXISTING UTILITIES AND STRUCTURES TO REMAIN.
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- EXISTING UTILITIES AND STRUCTURES TO REMAIN.
- EXISTING UTILITIES AND STRUCTURES TO REMAIN.

Legend

- SOIL EVALUATION
- CATCH BASIN
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED GRADING
- EXISTING GRADE
- WATER SERVICE LINE
- DRAINAGE LINE
- BENCHMARK
- WELL

Erosion Control

Locas Map

Treatment Tank Riser & Cover Detail

Site Plan

A.P. 9-1 LOT 8 AREA=4.5 Acs

A.P. 9-1 LOT 9

GRAPHIC SCALE
1 inch = 20 feet

T.H. Skurka
P.L.L.C.
1501 W. 15th Street, Suite 100
Fargo, ND 58103

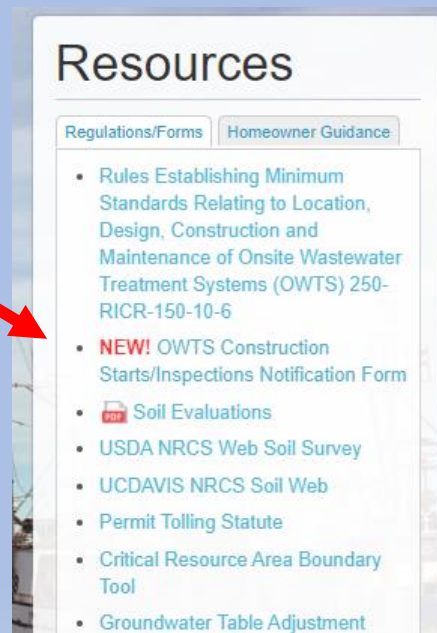
Onsite Wastewater Treatment System
Date: 08/20/2019
Assoc.'s Plat # 9-1, LDB
Ritz Window Sweets Road - Senter, R.L.L.

Sheet 1 of 1

Licensed Designer Notifies DEM of Start of Construction

Can now submit online:


<https://ridem.wufoo.com/forms/z1drjvsa0j8oqgi/>



The screenshot shows a webpage titled "Resources" with two tabs: "Regulations/Forms" and "Homeowner Guidance". A list of links is displayed under the "Regulations/Forms" tab. A red arrow points to the link for "NEW! OWTS Construction Starts/Inspections Notification Form".

Resources

Regulations/Forms Homeowner Guidance

- Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems (OWTS) 250-RICR-150-10-6
- **NEW!** OWTS Construction Starts/Inspections Notification Form
-  Soil Evaluations
- USDA NRCS Web Soil Survey
- UCDAVIS NRCS Soil Web
- Permit Tolling Statute
- Critical Resource Area Boundary Tool
- Groundwater Table Adjustment



INSPECTION REPORT

APPLICATION NUMBER: 1911-0536	
STREET: 121 Widow Sweets Road	INSPECTOR: Duranleau
CITY/TOWN: Exeter	INSPECTION DATE: 07/09/2019
PLAT/LOT: 041-3	POLE NO:
OWTS INSTALLER: Olson 1.0642	Designer: D115
PHONE NO: 401-855-3245	ARRIVAL TIME: 11:00
INSPECTION NUMBER: 1	WEATHER CONDITIONS: Sunny
TYPE OF INSPECTION: Bottom Inspection	

FINDINGS/COMMENTS

Bottom excavated trench
material is gs
OK TO PROCEED

RESULTS OF INSPECTION/ACTION REQUIRED

CONSTRUCTION - DESIGNER MUST INSPECT/APPROVE PRIOR TO DEM INSPECTION

- Bottom inspected
- Cover inspected
- Correct items listed
- (RFA) Address items listed and call for re-inspection.
- (ASB) Designer must submit As-Builts
- (RPREQ) Redesign required. Submit new application.
- (RFAD) Stop Construction, Contact OWTS office. DO NOT CONTINUE.
- (COC) Designer submit COC
- (O&M) O&M agreement and permit must be recorded in Land Evidence Records.
- (Fee) A \$100.00 fee is required before re-inspection.
- Inspection waived



Signature of Inspector

SITE TESTING

- Soil Evaluation - Concur
- Soil Evaluation - Do not concur
- Soil Evaluation - Inconclusive
- Alteration Test Hole - Verified
- Alteration Test Hole - Unacceptable
- Ledge Test
- Fill Tests
- Repair Test Hole


Designer Calls to Schedule DEM "Bottom Inspection"

Designer Calls to Schedule DEM "Cover Inspection"


 Rhode Island Department of Environmental Management Onsite Wastewater Treatment System Program		Phone: 401-222-6820 Fax: 401-222-6177	
INSPECTION REPORT			
APPLICATION NUMBER: 1911-0536			
STREET: 121 Widow Sweets Road		INSPECTOR: Duranleau	
CITY/TOWN: Exeter		INSPECTION DATE: 07/11/2019	
PLAT/LOT: 9-1 8	POLE NO: 49	ARRIVAL TIME: 1:00	
OWTS INSTALLER: Olson L0642	Designer: D115	WEATHER CONDITIONS:	
PHONE NO: 401-855-3245	INSPECTION NUMBER: 2		
TYPE OF INSPECTION: Cover Inspection			
FINDINGS/COMMENTS			
- Outlet tee w/ filter installed in tank - D-box & field installed per plan - Maintain max cover 30" over system, may need to cut down bank near d-box - Vent installed OK TO COVER			
RESULTS OF INSPECTION/ACTION REQUIRED			
<input type="checkbox"/> CONSTRUCTION - DESIGNER MUST INSPECT/APPROVE PRIOR TO DEM INSPECTION		<input type="checkbox"/> SITE TESTING	
<input type="checkbox"/> Bottom inspected <input checked="" type="checkbox"/> Cover inspected <input type="checkbox"/> Correct items listed <input type="checkbox"/> (RFA) Address items listed and call for re-inspection. <input type="checkbox"/> (ASB) Designer must submit As-Builts <input type="checkbox"/> (RPREQ) Redesign required. Submit new application. <input type="checkbox"/> (RFAD) Stop Construction. Contact OWTS office. DO NOT CONTINUE. <input checked="" type="checkbox"/> (COC) Designer submit COC <input type="checkbox"/> (O&M) O&M agreement and permit must be recorded in Land Evidence Records. <input type="checkbox"/> (Fee) A \$100.00 fee is required before re-inspection. <input type="checkbox"/> Inspection waived		<input type="checkbox"/> Soil Evaluation - Concur <input type="checkbox"/> Soil Evaluation - Do not concur <input type="checkbox"/> Soil Evaluation - Inconclusive <input type="checkbox"/> Alteration Test Hole - Verified <input type="checkbox"/> Alteration Test Hole - Unacceptable <input type="checkbox"/> Ledge Test <input type="checkbox"/> Fill Tests <input type="checkbox"/> Repair Test Hole	
Signature of Inspector 			

Designer's Certificate of Construction

- Designer is responsible for overseeing the construction of the OWTS and serves as the system inspector
- Designer certifies that the system was installed in accordance with the approved plan
- This is the last step in the construction process



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
PERMITTING SECTION
Onsite Wastewater Treatment Systems (OWTS) PROGRAM



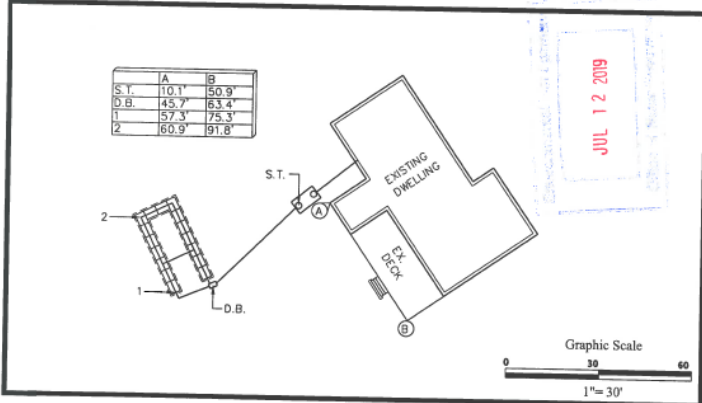
DESIGNER'S CERTIFICATE OF CONSTRUCTION FOR OWTS

Permit No. 1911-0536

I, Glen Skurka, as the designer of record for the OWTS installation located at
(Street) 121 Widow Sweets Rd. in the City or Town of
Exeter, R.I. hereby certify that the installation of the OWTS was
performed by the installer named below, and to the best of my information, knowledge and belief, was
witnessed and inspected in accordance with RIDEM/OWTS Rules, and that, in my professional opinion, the
installation of the OWTS conforms with the plans, specifications, applicable statutes, regulations, and
construction tolerances as approved by the Director of the Rhode Island Department of Environmental
Management. I further certify that I have documented the installation in accordance with RIDEM/OWTS
Rules. This certification is effective as of (date): July 12, 2019

The septic tank, D-box (if any) and leach field are located as set forth below:

	A	B
S.T.	10.1'	50.9'
D.B.	45.7'	63.4'
1	57.3'	75.3'
2	60.9'	91.8'



JUL 12 2019

Installer's Name Matt Olson License No. L-0642
 Designer's Name Glen Skurka License No. D-1159
 Designer's Signature Glen Skurka Date Signed 7/12/19
 Designer Request of Change (DROC) Approval Date(s) _____



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES PERMITTING SECTION
235 PROMENADE STREET
PROVIDENCE, RI 02908

July 15, 2019

TO: John W Grann
1221 Widow Sweets Road
Exeter, RI 02822

SITE INFORMATION:
Application No.: 1911-0536
Street: 121 Widow Sweets Road
Town: Exeter
Plat: 9-1
Lot: 8
Subdivision:
Subdivision Lot No:

CERTIFICATE OF CONFORMANCE

This Certificate of Conformance means that the Onsite Wastewater Treatment System (OWTS), which has been installed under the above application number, appears to substantially conform with the design requirements and other requirements as indicated on the application, and associated plans and specifications. **PERMISSION IS THEREFORE GRANTED FOR UTILIZATION OF THE SEWAGE DISPOSAL SYSTEM.** A copy of this certificate has been forwarded to the building official of the municipality having jurisdiction over the subject site; he/she may issue a Certificate of Occupancy for the building provided all other local requirements have been met. The building official must receive a copy of the Certificate of Conformance prior to his or her issuing any required certificate of occupancy for the building or facility to be served by the OWTS.

This Certificate is based upon the representations of the Owner and his/her agents, who are responsible for the proper installation of this system. This Department has approved the OWTS installation in reliance upon those representations and is not responsible for any of the construction, design details, specifications, distances or elevations indicated on the application, plan or specifications. This approval is subject to future suspension and revocation in the event that: subsequent examination reveals that any of the data indicated on the application, plan or specifications is incorrect or not in compliance with applicable regulations; or the OWTS system discharges sewage to the surface of the ground or to any watercourse, fails to otherwise operate satisfactorily or is altered in a manner which deviates from the terms of the approved application.

Authorized Agent: Mohamed J. Freij, PE, PLS, Supervising Sanitary Engineer

ONSITE WASTEWATER TREATMENT SYSTEM PROGRAM

SEE REVERSE SIDE FOR IMPORTANT INFORMATION ON CARE AND MAINTENANCE

Certificate of Conformance

- Issued by DEM when all paper work is in, including (Certificate of Construction, Recorded Deed Restrictions, Recorded A/E Technology O&M Contracts, etc.)
- Required for Certificate of Occupancy
- Final Step in the OWTS Permitting Process

OWTS Installer Requirements

- OWTS Installers Must Be Licensed in RI
- Licenses Are In Effect for 3 Years (3 years this cycle)
- Licenses May Be Denied, Suspended, or Revoked for Non-Compliance with OWTS Rules
- Installers Are Professionally Liable For Poor Workmanship.
- Be Honest, Treat People Right, Success Will Follow

Licensed Installers Must:

- (1) Perform all work in compliance with approved plans and specifications only.
- (2) Report any discrepancies on an approved plan, which he or she may note during construction to the Designer.
- (3) Utilize only quality grade construction materials approved by the DEM.
- (4) Use only the best construction techniques to provide for the best possible installations.
- (5) Work only under valid plans approved by the DEM with the approval stamp clearly indicated, and commence work only after completely reviewing the entire approval including the application, the layout plans, all typical specification sheets, and other attachments.
- (6) Adhere to each and every term of approval as stipulated by the DEM

Penalties for Non-Compliance

The penalties for noncompliance are as follows: any person who knowingly and willfully violates any rule or regulation adopted pursuant to authority granted to the DEM, upon conviction, shall be punished by a fine of not more than five hundred dollars (\$500), or by imprisonment for not more than thirty (30) days, or both, for each offense or violation, and each day's failure to comply with any rule or regulation shall constitute a separate offense.

Common Non-Compliance Issues During Installation

- Designer of record fails to call DEM 24 hrs prior to the start of construction (OWTS Rule 6.47.E)
- System design changes are authorized by the designer and completed without DEM notification/approval (OWTS Rule 6.47.G).
- Designer missing installation deficiencies during inspections, for example:
 - Dirty Stone
 - Smearred Bottom
 - Incorrect Leachfield Location or Elevation
- DEM not called to request bottom or cover inspection as required by permit conditions.
- Installer starting work without designer authorization.
- Installer calling DEM for notice of start of construction

Exam Preparation

Exam Specifics

- Closed Book (No Books, Notes, Documents Allowed)
- 3-Part Exam (50% Fundamentals & Regulations [75 questions], 30% Plan Interpretation [25 questions], 20% Surveyor's Level Transit Questions [10 questions])
- 110 Multiple Choice Questions
- Time Limit= 2 ½ Hours
- Bring driver's license (photo ID needed) and simple calculator with you (can't use cell phone)
- DEM provides pencils and scrap paper
- Passing Score= 70%
- Exam Results E-mailed in 6-8 Weeks

Topics You Will Not See on the Installers Exam

- Pumps
- Commercial systems
- BSF/PSND Section
- Variances

Examples of Topics You Will See on the Installers Exam

- Design and Function of Septic System Components
- Required Separation Distances to SHWT and Restrictive Layer/Bedrock
- Minimum Setback Distances
- Definitions
- Know the difference between an OWTS and a Cesspool
- OWTS Permitting Process
- Firm Understanding of the OWTS Rules
- Section 6.47 of OWTS Rules – OWTS Installation

Sections Guaranteed to be on the Exam

- **6.8 Definitions**
- 6.14 Installer's License
- 6.15 OWTS – General
- 6.19 Required Content of OWTS Submissions
- **6.23 MINIMUM SETBACK DISTANCES (B)**
- 6.25 Building Sewers
- **6.27 SEPTIC TANKS**
- 6.28 Septic Tank Effluent Pipe
- 6.29 Holding Tanks
- **6.32 DISTRIBUTION BOXES**
- **6.33 LEACHFIELDS**
- 6.34 Dispersal Trenches
- 6.35 Concrete Chambers
- 6.43 Requirements in the Salt Pond and Narrow River Critical Resource Areas
- **6.47 OWTS INSTALLATION**

Sample Exam Question 1

A leach field must be at least _____ feet from the water supply line.

A) 10

B) 15

C) 25

D) 50

B. Minimum Setback Distances – General

	Building Sewer, Grease Tank, Distribution Box, Pump Tank, Septic Tank, Septic Tank Effluent Pipe (ft) (Note 12)		Leachfield (ft) (Note 12)	
	Design Flow <5000 gpd	Design Flow ≥5000 gpd (Note 4)	Design Flow <5000 gpd	Design Flow ≥5000 gpd (Note 4)
Well Serving Non-potable Uses (Note 13)	25		50	
Water Supply Line	10 (Note 1)		25	
Property Line	10 (Note 2)		Design Flow (gpd)	(ft)
			0-2000	10
			>2000-5000 Note (3)	50
		> 5000 Note (4)	min. 50 (Note 5)	
Foundation	5 (Not applicable to building sewer)		25 (Note 6)	
Subsurface drains, foundation drains , or storm drains (see also Tables 22.2 and 22.3): -- Upgradient and side gradient of the OWTS:	15 (Note 7)		25 (Note 8)	
	25 (Note 7)		50 (Note 9)	
-- Downgradient of the OWTS:				
Edge of any land at a level lower than the invert of the distribution line	10		10	
Stormwater Infiltration System	25 (Note 10)		25 (Note 10)	
Swimming Pools: In-ground:	10		25	
	Above ground:		10	
Coastal Shoreline Feature (Note 11) not in a Critical Resource Area, Flowing Water (Rivers and Streams), Open Bodies of Water (Lakes and Ponds), Other Watercourses Not Mentioned Above, and Any Stormwater Management Structure That Potentially Intercepts Groundwater	25	50	50	100

Notes: The reductions in setback distances allowed below in Notes (1) through (13) will not be granted if the setback distances in § 6.23(B) of this Part can be met. A variance request pursuant to § 6.51 of this Part shall not be required for the reductions indicated below.

Answer 1:

C -25ft.

OWTS Rule 6.23.B –
Minimum Setback
Distances - General

Sample Exam Question 2

2) A restrictive layer within a soil profile can be:

- A) Rotten Rock
- B) Decomposed Shale
- C) Ledge
- D) All of the Above
- E) None of the Above

Answer 2: **D – All of the Above** – All Three Are Considered Restrictive Layers: Ledge, Rotten Rock, Decomposed Shale

OWTS Rule 6.8 – Definitions

9. “Bedrock” means rock, commonly called ledge, that forms the earth’s crust. Bedrock includes rotten rock

66. “Rotten rock” means any decomposed but still coherent rock. Rotten rock is greater than fifty percent (50%) coherent rock and lies above equal or more coherent rock.

Answer 2: Soil Cat. 10

OWTS Rule 6.8 – Definitions

65. “Restrictive layer” means a soil horizon that is assigned to a soil category 10 as defined in § 6.16(L) of this Part.

OWTS Rule 6.16.L

Soil Category 10

L. Soil Category

Soil Category	Loading Rate (gals/sq ft/day) Pursuant to Rule 32.2 Starred items (*) are for soils with coarse fragment modifiers	Soil Texture	Soil Structure	Soil Consistence		Typical Soil Class
				Consistence In-Hand Using Soil Clods	Excavation Difficulty	
1	.70	cos, s, locs, ls, cosl, fs	structureless- single grain	loose friable	N/A	Outwash (Class C), ice contact (Class D) and coarse ablation till (Class B) deposits
	.61*		subangular blocky			
2	.61	vf, lvf	structureless- single grain	loose	N/A	Outwash (Class C) and ice contact (Class D) deposits
3	.70	ls, sl, l	granular, subangular blocky	very friable to friable	low	Lodgement Till (Class A), Ablation Till (Class B), Outwash (Class C), or Ice Contact (Class D)
4	.61	lf, lvf, fil, vfil	granular, subangular blocky	very friable to friable	low	Lodgement Till (Class A), Ablation Till (Class B), Outwash (Class C), or Ice Contact (Class D)
	.70*					
5	.52	sil, si, vfil	subangular blocky	very friable to friable	low	Typically Eolian deposits (Class G)
6	.61	locs, cosl, lf, ls, sl, l	structureless massive	very friable to friable	low	Ablation till (Class B)
	.70*					
7	.52	fil, vfil, sil, si, vf	structureless- massive	very friable to friable	low to moderate	Ablation till (Class B)
	.61*					
8	.46	all textures	structureless-massive	firm to very firm	moderate	Lodgement till (Class A)
	.48*					
9	.40	all textures	platy, structureless-massive	firm to very firm	high	Lodgement till (Class A)
	.43*					
10	Not Allowed (Impervious)	all textures	platy, structureless-massive	extremely firm	very high to extremely high	Lodgement till (Class A)

OWTS Rule 6.16.L - Soil Category 10

L. Soil Category

Soil Category	Loading Rate (gals/sq ft/day) Pursuant to Rule 32.2 Starred items (*) are for soils with coarse fragment modifiers	Soil Texture	Soil Structure	Soil Consistence		Typical Soil Class
				Consistence In-Hand Using Soil Clods	Excavation Difficulty	
10	Not Allowed (Impervious)	all textures	platy, structureless- massive	extremely firm	very high to extremely high	Lodgement till (Class A)

Sample Exam Question 3

3) A repair permit is valid for:

A) 2 years

B) 5 years

C) 1 year

D) Depends on if water supply is public or a well

E) None of the above

Answer 3: C - 1 Year

OWTS Rule 6.46.C – Permit Expiration

- C. Expiration of Permits for OWTS Repairs - All permits for repairs to OWTSs issued in accordance with § 6.18(G) of this Part shall expire as follows:
1. Where a permit for OWTS repair is issued following the property owner's receipt of a Notice of Violation issued by the Department, all repair work must be completed within the time periods set forth in the Notice of Violation; and
 2. In all other cases, permits for OWTS repair shall expire as specified in the permit itself. In no case shall any permit for a repair to an OWTS be valid for more than one (1) year from the date of issuance of the permit.

Plan Interpretation

Key System Components

Installation Notes

Invert Elevations

Areas of Cuts and Fill

Size of Leaching Area

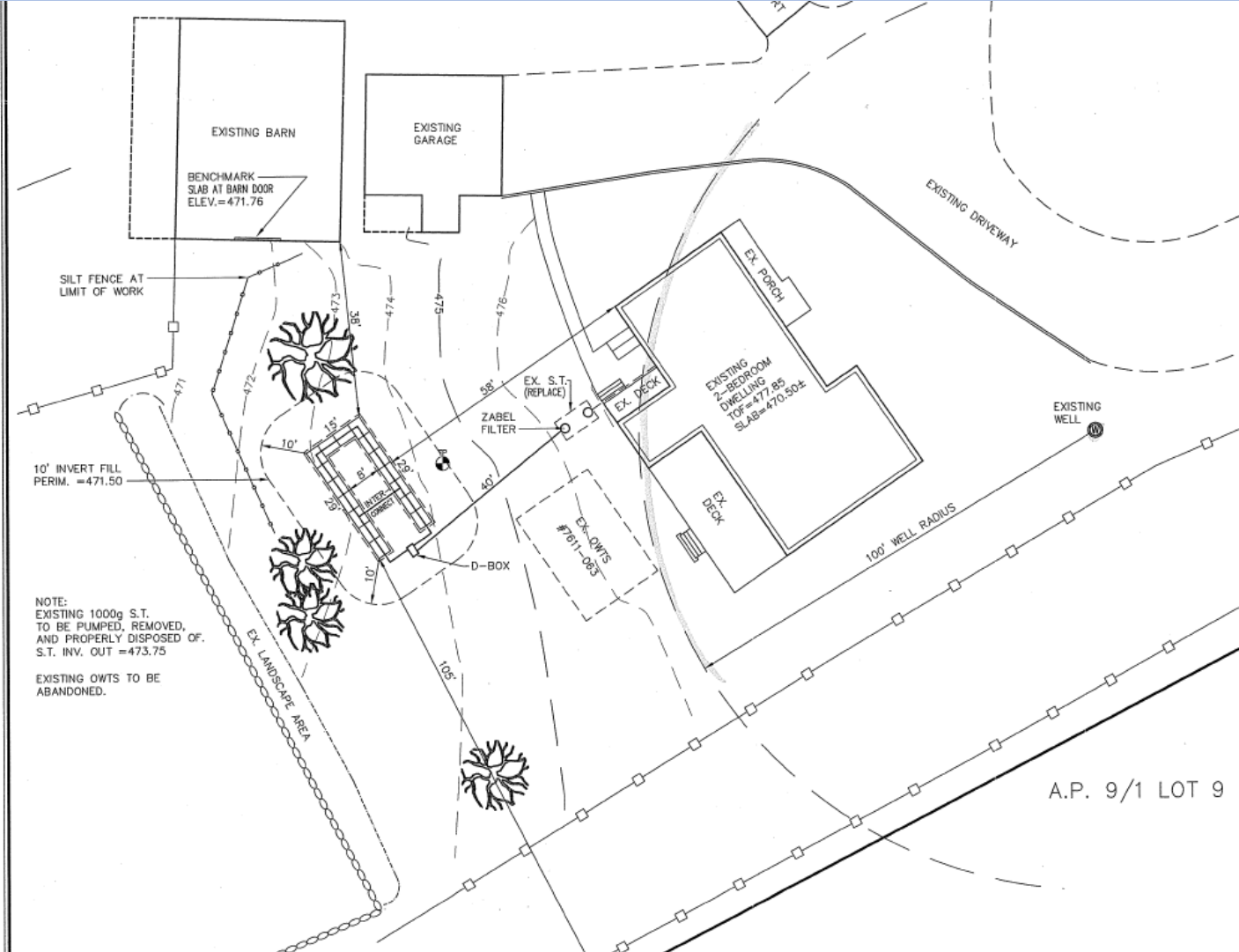
Depth of Stone/Sand

Depth of Cover

Plan Scale

Offset Distances

Fill Perimeter Elevation



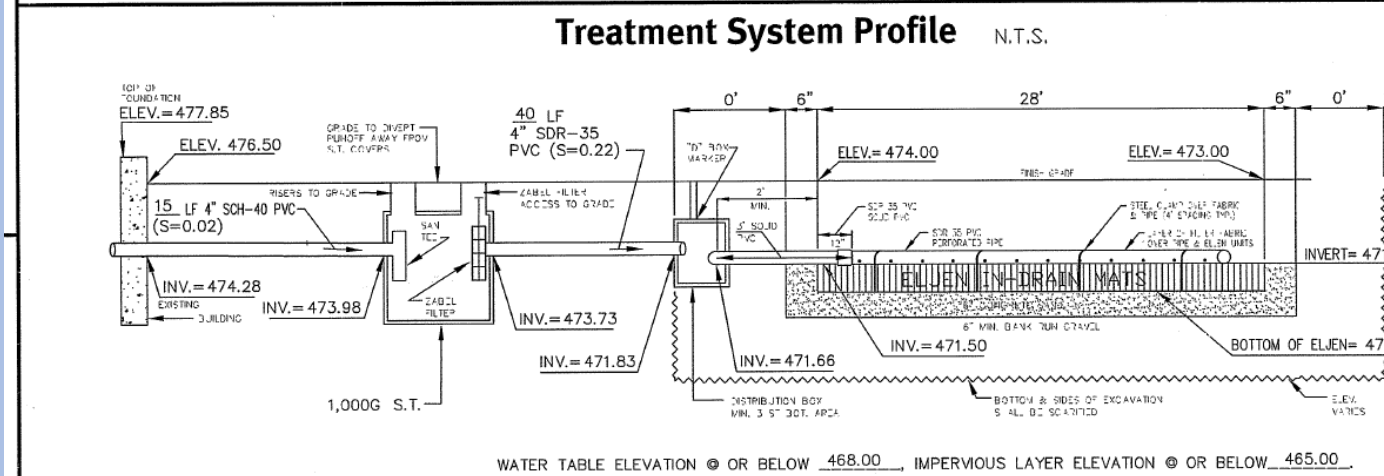
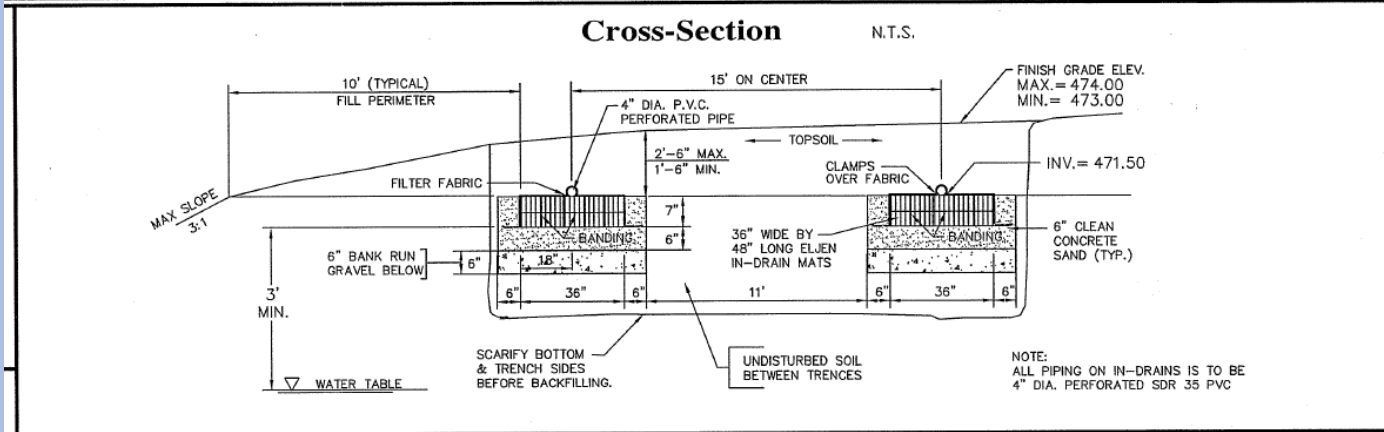
Plan Interpretation

Calculating Pipe Slope

Material Elevations/Types/Depths

Pipe Sizes/Type

Separation to SHWT/Impervious Layer



Sample Transit Level Question

If the cross hairs of the transit read 8.43 on the rod, the rod reading would be:

- a) 5.02
- b) 5.20
- c) 8.43
- d) 4.742

Sample Transit Level Question

If the cross hairs of the transit read 8.43 on the rod, the rod reading would be:

a) 5.02

b) 5.20

c) 8.43

d) 4.742

Sample Transit Level Question

A nail in a pole is used as a benchmark on a construction site. The assumed elevation of this benchmark is XXX . The transit is set up on the road and shoots a rod reading of YY (rod is set on nail in pole). What is the height of the transit?

Important Dates to Remember

Installer License Application Deadline

*needs to be notarized

DATE: March 15th, 2024

Application Fee is \$175

(Includes Exam Fee and License Fee)

License will be for 3 years

(Please include email!)

www.dem.ri.gov/septic

Next Exam Date

DATE: Wednesday **March** 19th, 2024

TIME: 9am-12 noon

LOCATION: 235 Promenade Street, Providence, RI Room 300

DIRECTIONS: <http://www.dem.ri.gov/directions/foundry-offices.php>

Questions on Installer Licensing and Exam Logistics

Contact: Jacqueline Kendrick-Tedesco or
Karen Sorensen at RIDEM

Jacqueline.Tedesco@dem.ri.gov

Karen.Sorensen@dem.ri.gov

401 -222 - 3961



Announcements

New Website Design!

- Underground Injection Control +
- Water Quality Certification +
- Wastewater Treatment Facilities +
- Permit Tolling
- Professional Licensing +
- Research & Monitoring +
- Waters & Wetlands +
- Financial Assistance +
- Outreach & Education +
- Water Topics A-Z
- Rules & Regulations

3. System installation: Field inspections are conducted by DEM staff during the key stages of system siting and installation.

OWTS (Septic System) Records



OWTS (Septic) Permit Search

Looking for OWTS (Septic) Records? Search Online First!

1. DEM has records of most Onsite Wastewater Treatment (Septic) Systems, or “OWTS” from 1968 through today. Search for historical information, permit status, and download documents from our New [OWTS Online Permit Search](#) ↗
2. If the information available online is not sufficient to meet your needs, please submit a [Records Request Form](#) to ✉ DEM.FileReview@dem.ri.gov. Requests for electronic copies will be satisfied within ten (10) business days. Requests to review records in-person at DEM will be satisfied within two (2) business days.
3. If you are still unsuccessful in your search it is likely that we do not have a record of your system at the DEM. Please contact an [OWTS professional](#) to assist you.

New Database Coming Soon..?

- Applications will be submitted online
- Accept online payment
- Licensees will have their own portal to check status of license and applications
- Less leniency when submitting applications

New URI Resource



**A guide to finding septic
system permits & plans
through the RIDEM
OWTS Permit Search**

Sign-Up For the Listserve

Dem.ri.gov/septic

Stay Informed

Subscribe to the OWTS info E-mail List: This voluntary email list is used to distribute information about policy and rule changes to the Onsite Wastewater Treatment System program in Rhode Island. You will also receive regular announcements on CEU eligible courses, licensing application deadlines, and application guidance for professionals.

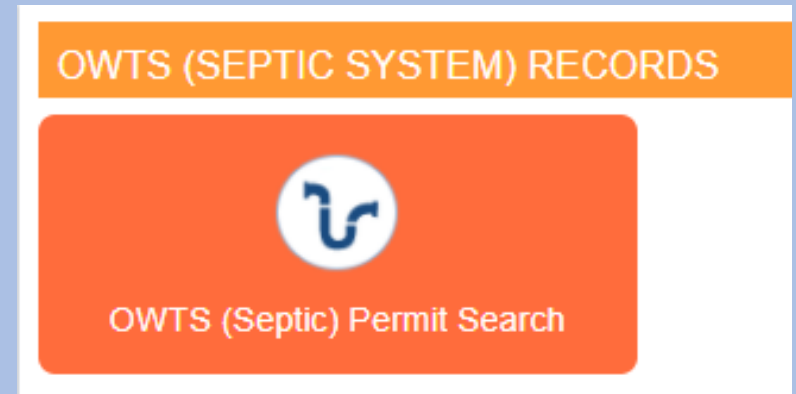
[Subscribe here](#)

For questions or help subscribing:

✉ owner-owtsinfo@listserve.ri.gov

Try Our New Permit Search

- Incorporates all permits
- 1968-present
- Filters permits as you search
- Conformed files through 2023
- New conformed files uploaded daily



www.dem.ri.gov/septicsmart



Do Your Part. Be SepticSmart!



Shield Your Field
Divert rain and surface water away and avoid parking vehicles and planting trees on your drainfield.



Don't Overload the Commode
Don't flush diapers, wipes or other items meant for a trashcan down the toilet.



Think at the Sink
Limit use of your garbage disposal and avoid pouring fats, grease, solids and harsh chemicals down the drain.



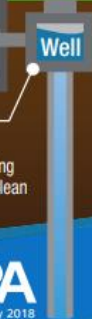
Don't Strain Your Drain
Use water efficiently and stagger use of water-based appliances, such as your washing machine or dishwasher.



Protect It and Inspect It
A typical septic system should be serviced every one to three years by a septic service professional.

Pump Your Tank
Ensure your septic tank is pumped at regular intervals as recommended by a professional.

Keep It Clean
If you are on a well, test your drinking water regularly to ensure it remains clean and free of contamination.



Aquifer

Top 10 Ways to Be a Good Septic Owner

- ✓ Have your system inspected every three years by a qualified professional or according to your state/ local health department's recommendations
- ✓ Have your septic tank pumped, when necessary, generally every three to five years
- ✓ Avoid pouring harsh products (e.g., oils, grease, chemicals, paint, medications) down the drain
- ✓ Discard non-degradable products in the trash (e.g., floss, disposable wipes, cat litter) instead of flushing them
- ✓ Keep cars and heavy vehicles parked away from the drainfield and tank
- ✓ Follow the system manufacturer's directions when using septic tank cleaners and additives
- ✓ Repair leaks and use water efficient fixtures to avoid overloading the system
- ✓ Maintain plants and vegetation near the system to ensure roots do not block drains
- ✓ Use soaps and detergents that are low-suds, biodegradable, and low- or phosphate-free
- ✓ Prevent system freezing during cold weather by inspecting and insulating vulnerable system parts (e.g., the inspection pipe and soil treatment area)



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For more SepticSmart tips, visit www.epa.gov/septicSMART

 EPA-832-F-16-010 | July 2016

SepticSmart Dos and Don'ts for an Advanced Treatment Unit (ATU)

What is an ATU?

Advanced Treatment Units (ATUs), referred here to as an individual residential system, are small biological treatment systems used to treat wastewater to a higher degree than a traditional septic system.

Why would I need or want an ATU versus a traditional septic system?

ATUs are used in many states to achieve a higher-quality wastewater than what exits traditional septic tanks. In fact, they are necessary in some areas — either because of the sensitivity of the environment, or because of site conditions. ATUs are also designed to reduce nutrient loadings, whereas traditional septic systems are not.

What is the required maintenance?

As with all septic systems, an ATU's proper functioning relies on regular maintenance. Due to its advanced components, an ATU needs more maintenance than a traditional septic system.

To ensure proper functioning, most states require annual operation, maintenance, monitoring and reporting as a requirement of the homeowner's septic permit. A maintenance provider should perform these services. Contact the ATU manufacturer for information on maintenance providers. The ATU manufacturer trains maintenance providers to assure they are familiar with the manufacturer's treatment system.

In addition to the *Dos and Don'ts of Septic Systems*, ATUs have some additional dos and don'ts because of their advanced parts.

Follow Septic Sam's ATU dos and don'ts:

Don't:

- Turn off any air supply device, alarm or electrical component of the system.
- Bypass the system.
- Modify, cover or move any system components without prior approval from the service provider.
- Pump the ATU without service provider approval or supervision.

Do:

- Use soaps and detergents that are low-suds, biodegradable, and low- or phosphate-free.
- Fix leaky fixtures.
- Use low-flow fixtures.
- Dispose of unused medications in the garbage.
- Substitute liquid fabric softener with dryer sheets.

For more SepticSmart tips, visit www.epa.gov/septic

Proper Landscaping On and Around Your Septic System

The drainfield is a vital part of your septic system. Having the right landscaping on and around your system is important, as tree and shrubbery roots can grow into the drain lines. Also, other heavy items like cars and livestock can break drain lines. Strong roots and heavy items can cause the drainfield to fail. And if the drainfield fails, your system fails.

Here are some tips to keep your drainfield out of harm's way.

Locate your septic tank and drainfield. Then make sure the area is clear of:

- Underground sprinkler lines
- Decks and patios
- Sports courts
- Storage sheds
- Swing sets
- Sand boxes
- Driveways
- Vehicles
- Swimming pools

Plant native, drought-tolerant plants. These are some of the best for your septic system and its drainfield:

Grass:

- Fescue
- Lawn
- Ornamental grasses
- Wildflower meadow mixes

Groundcovers for sun:

- Bugleweed (Ajuga)
- Carpet heathers (Calluna Vulgaris)
- Cotoneaster (Cotoneaster)
- Ground Ivy (Glechoma)
- Kinnikinnick (Arctostaphylos)
- Periwinkle (Vinca)

Groundcovers for shade:

- Bunchberry (Cornus)
- Chameleon (Houttuynia)
- Ferns
- Mosses
- Sweet woodruff (Galium Odoratum)
- Wild ginger (Asarum)
- Wintergreen (Gaultheria)

Follow Septic Sam's landscaping do's and don'ts:

Don't:

- Plant a vegetable garden on or near the drainfield.
- Put plastic sheets, bark, gravel or other fill over the drainfield.
- Reshape or fill the ground surface over the drainfield and reserve area. However, just adding topsoil is generally OK if it isn't more than a couple of inches.
- Make ponds on or near the septic system and the reserve area.

Do:

- Plant grass or keep existing native vegetation. These are the best covers for your drainfield.
- Direct all surface drainage away from the septic system.
- Use shallow-rooted plants (see plant list above). Tree and shrub roots can grow into the drainlines, clogging and breaking them.
- Avoid water-loving plants and trees.
- Make sure the tank lid is secure.

For more SepticSmart tips, visit www.epa.gov/septicmart



Educate Homeowners and Grow Your Business

Have a septic system?
Call your service provider to have your septic system serviced today.

Regular septic system maintenance can save you thousands of dollars!

EPA
830-F-190-05 | May 2015

Don't wait for your system to fail to call for service!

Avoid the hassles and headaches of a failing system by calling your service provider today.

A typical septic system should be serviced every one to three years by a septic system service provider. Follow recommendations from your service provider and requirements from your town, county, or state on having your septic tank pumped.

Do your part. Be SepticSmart!
SepticSmart Week is held the third week in September each year.
Learn tips and tricks on how to maintain your septic system at www.epa.gov/septic.

Put stamp here.

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U.S. Environmental Protection Agency

Our Customer
12345 Main Street
Clean Town, USA 86753

Add your text or website here.

On a septic system?
When's the last time you thought about it?

Your septic system is part of your home and your responsibility.

Don't wait until you have issues with your septic system. Protect your home investment and avoid costly replacement—call a licensed septic tank contractor today.

- Have your septic tank inspected and pumped out by a licensed septic tank contractor as needed (on average every three to five years).
- Protect your system by practicing simple, daily tips (see reverse).

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U.S. Environmental Protection Agency

SEPTIC TIPS

- ✓ **Keep it Protected—Get it Inspected!**
Have your septic tank inspected and pumped out by a licensed septic tank contractor as needed (on average every three to five years).
- ✓ **Don't Strain your Drain!**
Use water efficiently to avoid overtaxing your system. Fix household leaks, run the dishwasher and clothes washer only on full loads, and consider installing high-efficiency fixtures.
- ✓ **Think at the Sink!**
Don't pour grease, fats, or harmful chemicals like paints and solvents down your sink. They can clog or harm your system.
- ✓ **Don't Overload the Commode!**
Do not flush non-degradable items such as dental floss, diapers, coffee grounds, or feminine hygiene products.
- ✓ **Shield your Field!**
Care for your drainfield by only planting grass, not driving or parking on it, and reducing roof and surface water drainage near the drainfield.

Know your part, be SepticSmart!
Learn more at www.epa.gov/septicSMART.

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EPA 832 E-12-005 September 2012

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