

The PDEQ* Virtual Septic Inspection

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AUTHORITIES & DESIGN
SPECIFICATIONS at
InspectApedia.com



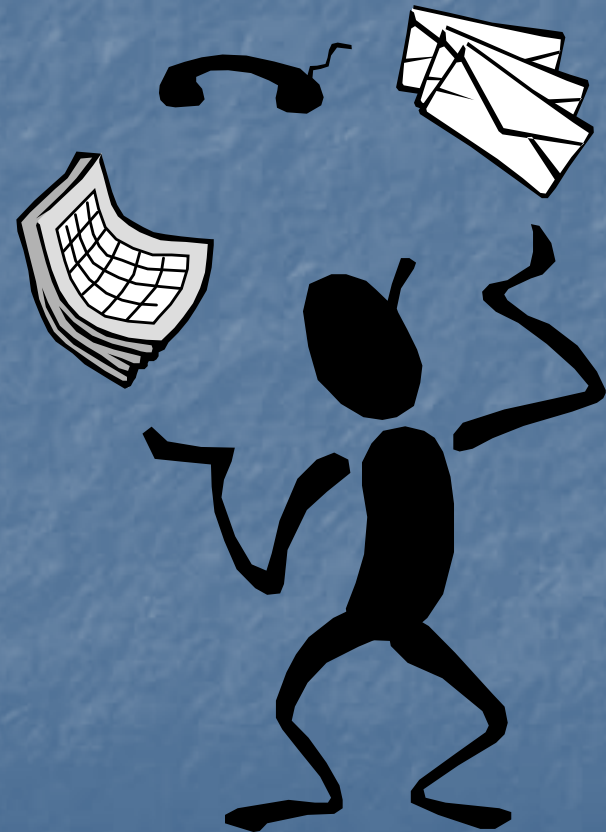
- Use this step-by-step guide to learn what PDEQ inspectors are looking for
- Inspection criteria are highlighted so you know what to expect
- Additional questions?

Call and ask to speak with an inspector:
520-724-7400



The following slides will illustrate how to:

- Schedule your inspection
- Help the inspector find your jobsite
- Ensure you provide the correct paperwork



To Schedule An Inspection For Non-remote Areas



- Use the Interactive Voice Response (IVR) System
- Call 520-724-6970 by 4:00 pm for an inspection the following business day
- Have the 10-digit activity number available
- The 5-digit septic inspection code is 03060

To Schedule An Inspection For A Remote Area

- Remote areas include: Ajo, Why, Lukeville, Arivaca, Sasabe, Redington and Mt. Lemmon
- Call PDEQ at least 48 hours in advance to schedule inspection
520-724-7400



Post the address at the jobsite



- Put the paperwork in a location that is easy for the inspector to find



What Paperwork Should Be At The Jobsite?

- **Many** inspections are rejected because the necessary paperwork is not at the jobsite
- Continue with the Virtual Inspection to find out what paperwork must be provided at the time of your requested inspection



Required Paperwork 1 of 4

POST AT JOB SITE Checklist



Provide the required paperwork in a visible location at the jobsite

INSPECTION WILL BE REJECTED IF NOT POSTED
*\$10.00 fee for replacement paperwork

PER PC 18.83.050, ALL ADDRESSES MUST BE POSTED PRIOR TO INSPECTION

<u>Residential</u>	<u>RV/Mobile Home</u>
<small><50 feet from the curb requires 3" numbers displayed on the building.</small>	<small>Entrance numbers shall be 12"</small>
<small>>50 feet from the curb requires 3" numbers displayed a minimum of 36" above the ground at the primary access point.</small>	<small>Building numbers shall be 6"</small>
	<small>Space numbers shall be 3"</small>

CHAMBER SEPTIC SYSTEM FINAL INSPECTION

Property Address: _____ Project Number: _____

Inspector Name: _____ Date of Inspection: _____

The Water Tightness Test shall be performed, and the certificate shall be completed PRIOR to the call for final inspection. Please contact Pima County at 740-6970 to schedule an inspection.

Septic Tank and Distribution Box: R18-9-A314

Tank leak tested (completed certificate included)

Tank size and location match site plan or new location shown on As-built

Manufacturer, tank size, max depth of cover, and date of manufacture marked on top of tank

Mfr. _____ Size _____ gallons Material _____

Tank is level

Inlet & Outlet clearly and permanently marked above or to the right or left of openings

Inlet/outlet openings and vertical leg at least 4" but not smaller than size of connecting sewer

a. Extends at least 4" above & at least 12" below liquid surface

b. Inlet invert installed 2" above outlet invert

Two compartments, or two tanks with 2/3:1/3 ratio

Appropriate risers installed if the depth of cover is greater than 6 inches

Access openings at least 20" wide

a. One over inlet, one over outlet

b. If first compartment is over 12 feet long, 3rd opening provided over baffle

Appropriate baffle in place OR

No baffle for tanks in series

Effluent filter installed and is accessible

Pipe between septic tank and distribution box placed on natural ground or compacted fill

Distribution box level, on stable surface, and inlet at least 1" above outlet

Plumbing and distribution piping is appropriate size / material and connections water tight

Chambers: R18-9-E302

Trenches located according to site plan

Trench spacing: Distance: _____

Number of trenches: _____ Dimensions: Length: _____ Width: _____ Depth: _____

Number of chambers per trench: _____

Minimum 9 inches available over chamber for cover

Chamber end plates left off for inspection

Chambers follow contour and trench bottom level and free of rocks and debris

Observation port(s) installed above grade and capped

Proper drainage on property to minimize damage from flooding and erosion

Verification of General Permit Conformance: R18-9-A.309.C

Accurate "As-Built" site plan signed by the field inspector

Comments: _____

Recommend Approval _____ Rejected _____ Signature _____

■ Required Paperwork 2 of 4

■ Certificate of Watertightness
(must be completely filled out
PRIOR to inspection)



Certificate of Watertightness of an Installed Septic Tank
Determined by Field Watertightness Testing
Under Arizona Administrative Code R18-9-A309(C) (1)

Project Information		
Property Address: _____		
File Number: _____		
Watertightness Tester		
Name: _____		
Company: _____		
Address: _____		

Septic Tank Information		
Manufacturer: _____		
Material / Model: _____		
Design Liquid Capacity: _____ gallons		
Was a Manufacturer's Certificate of Conformance stating that tank meets the requirements of R18-9-A314 received from manufacturer? Yes <input type="checkbox"/> No <input type="checkbox"/>		
Watertightness Test Information		
	<u>Date</u>	<u>Time</u>
1. Start 24-hour presoak with clean water	_____	_____
2. Start of field watertightness test	_____	_____
3. End of field watertightness test	_____	_____
<input type="checkbox"/> Passed watertightness test without repair (no water drop over 1-hour period per A.A.C. R18-9-A314(5)(d)(ii))		
<input type="checkbox"/> Passed watertightness test following repair		
Indicate Repairs Made: _____		

Certification		
I have tested the installed septic tank for the above-named project in accordance with the watertightness testing requirements specified in Arizona Administrative Code R18-9-A314(5)(d) and certify that the septic tank passed the watertightness test.		
Signature of Tester: _____		
Date of Certification: _____		

**Note: Not required for projects with
a Notice of Intent dated
11-12-05 or before**



■ To help you correctly fill out the Certificate of Watertightness, follow the instructions to the right

■ If you still have questions, contact an inspector (see slide #2 for phone number)

**How to conduct a watertightness test:
(Arizona Administrative Code R18-9-A314.5.d)**

Fill the septic tank to the outlet.

Once filled, note the date and time on the Certificate of Watertightness on line 1 (see example below).

Allow the tank to soak for 24 hours.

After 24 hours has passed, refill the tank to the outlet and make a note of the water level. Fill in the date and time on line 2 (see example). This is the start of the field watertightness test.

After 1 hour has elapsed, look at the water level again. Fill in the date and time on line 3 (see example). This is the end of the field watertightness test.

Check the appropriate box indicating whether the tank passed the watertightness test without repair or if it passed the watertightness test following repair. NOTE: The tank passes if the water level does not drop over the one-hour period.

Be sure the rest of the information, including the signature of the tester, is filled in on the Certificate of Watertightness of an Installed Septic Tank.

EXAMPLE:

Watertightness Test Information

	<u>Date</u>	<u>Time</u>
1. Start 24-hour presoak with clean water	<u>2-10-07</u>	<u>9:00am</u>
2. Start of field watertightness test	<u>2-11-07</u>	<u>9:00am</u>
3. End of field watertightness test	<u>2-11-07</u>	<u>10:00am</u>

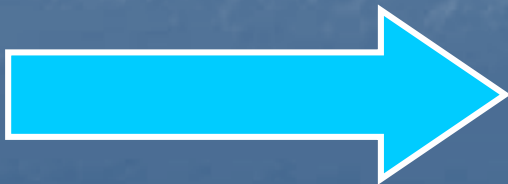
Passed watertightness test without repair
(no water drop over 1-hour period per A.A.C. R18-9-A314(5)(d)(ii))

Passed watertightness test following repair

Indicate Repairs Made:

Required Paperwork 3 of 4

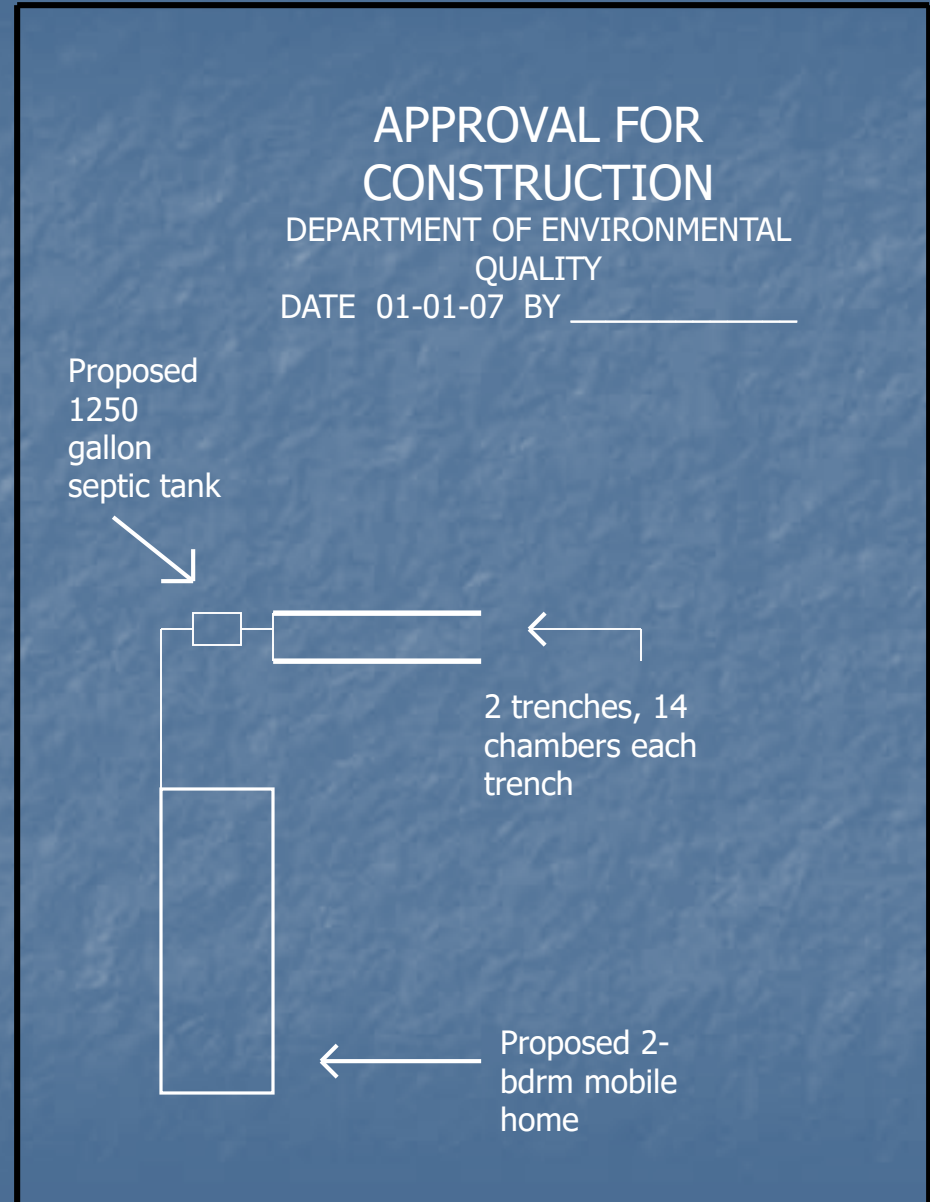
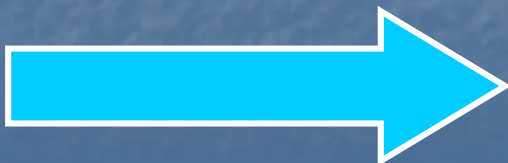
Construction Authorization (Form C) – needs to be the original copy provided in the inspection packet



PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY CONSTRUCTION AUTHORIZATION FOR AN ONSITE WASTEWATER TREATMENT FACILITY TYPE 4.02 THROUGH 4.22 GENERAL PERMITS		
Property Address: 1234 N. EASY ST.		
Applicant Information:		File Number: P07CP00000
Name:	JOHN Q. PUBLIC	Permitted Design Flow: 600 Gallons Per Day
Address:	54321 E. PARK ST. TUCSON, AZ 85777	<input type="checkbox"/> Manufactured/mobile <input type="checkbox"/> Site built (SFR) Number of Bedrooms 3 Number of Fixture Units 37
Name and Address of Facility (if different from above):		County: Pima Parcel No: 000-00-000R
Characteristics of the Wastewater Source(s): <input checked="" type="checkbox"/> Typical sewage from a single family residence <input type="checkbox"/> Typical sewage from multiple residences <input type="checkbox"/> Sewage source(s) other than residential:		T 00S R 00E S 00 SW ¼ (000) SE ¼ (00) SW ¼ (00)
		Latitude: 00° 00' 17" N Longitude: 000° 00' 00" W
Design Documents That Are The Basis For The Authorization: <input checked="" type="checkbox"/> Notice of Intent, dated 3/1/07 <input checked="" type="checkbox"/> Site Investigation, dated 1/1/07 <input checked="" type="checkbox"/> Site plan, dated 1/1/07 <input checked="" type="checkbox"/> List of Materials, dated 1/1/07 <input checked="" type="checkbox"/> Design plan, dated 1/1/07 <input checked="" type="checkbox"/> Soil Evaluation results, dated 1/1/07 <input type="checkbox"/> Operation and Maintenance Plan, dated <input type="checkbox"/> Other document(s) <input checked="" type="checkbox"/> Appropriate Fee		Construction is Authorized Under the Following General Permits: <input checked="" type="checkbox"/> General Permit 4.02 <input type="checkbox"/> General Permit <input type="checkbox"/> General Permit
Construction Authorization Stipulations: This Construction Authorization is issued in accordance with the Arizona Administrative Code Title 18, Chapter 9, Article 3. The applicant is authorized to construct the facility at the location specified herein based on the listed design documents under the terms and conditions of the checked General Permit number(s) and the requirements of Arizona Revised Statutes Title 49, Chapter 2. The Applicant has two years from the approval date of this document to complete construction and submit the Request for Discharge Authorization form and any additional required documents specified in A.A.C. R18-9-A309(C) or the checked General Permits. Construction shall conform to the approved design documents. A County Inspector shall perform the final inspection of the system and submit the results to Development Services for issuance of a Discharge Authorization.		
Signature	Title	Date
Design Criteria		
Tank Size Required: 1250 Gals. Soil Absorption Rate (SAR): 0.60gpd/Sq.Ft Distribution Boxes: 1		
Effective Absorption Area Required: 1000 Sq. Ft Absorption Area per Chamber: 28.38 Sq.Ft.		
Number of Trenches: 2 Trench Length: 72' Trench Depth: 6.5'(MAX) Trench Width: 3'		
Number of Chambers per Trench: 18 Total Number of Chambers Required: 36		

- Required Paperwork
4 of 4

- Site Plan - needs to be the original plan with any As-built changes noted



As-Built Plan



- The As-Built Plan should be an accurate reflection of what the installed system looks like.
- **Major** changes, such as relocating the trenches, require a revision through Development Services **PRIOR TO INSPECTION**.
- Even minor changes (i.e. the pipes exit the D-box on the middle and left sides instead of on the right and left) should be drawn in.
- What inspectors see in the ground must be reflected on the As-Built Plan.

Construction Authorization

- Look on the Construction Authorization (Form C) for important design and installation criteria
 - Tank size
 - Trench depth (Form C often sets minimum and maximum depths – stay within limits or contact the designer and Development Services for a revision)
 - Number of chambers per trench
 - Number of trenches
 - Type of chamber (High Capacity vs. Quick4 Standard)

Get A Revision From Development Services If...

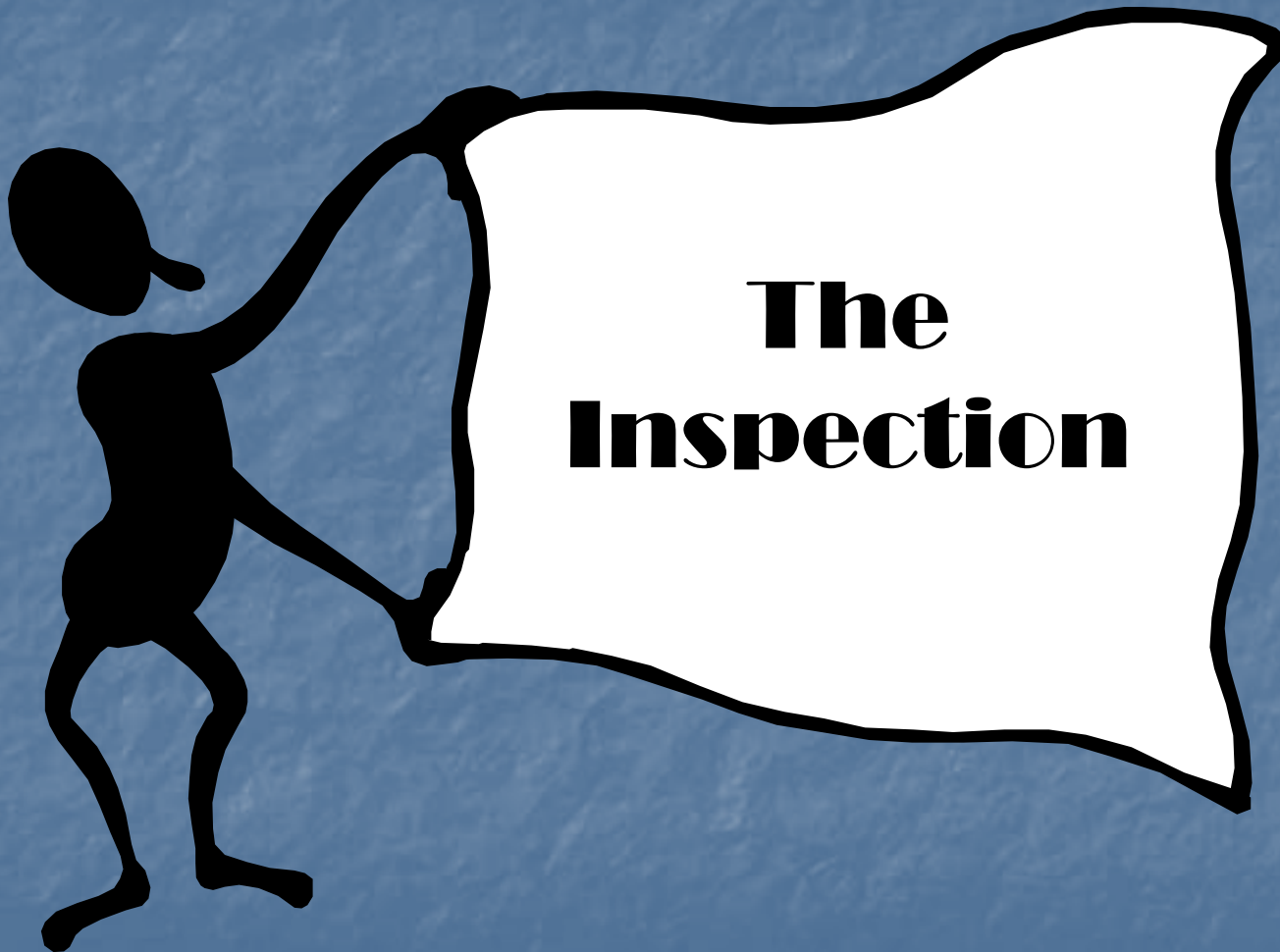
- You install a different type of chamber than indicated on the Construction Authorization (i.e. the Construction Authorization calls for High Capacity chambers - 6.25' in length, and you install Quick4 Standard chambers – 4' in length)



Get A Revision From Development Services If...

- You install an aggregate/trench (perforated pipe) system when a chamber system is called for on the Construction Authorization





**The
Inspection**

Effective 10/01/2007

Conventional Septic Inspections
will cost \$130 (per inspection)

- The fee for the first inspection is included when you pay for your Permit at Development Services.
- All additional inspections will cost \$130 each, including partials.
- Remember, this may affect your final cost.

The Septic Tank

- Clean off the top of the tank so that tank specs can be seen:
 - Manufacturer's name
 - Tank size
 - Date of manufacture
 - Maximum depth of cover
 - "Inlet" and "Outlet" (marked on the top or sides)



Septic Tank

- Leave both access openings/manholes open for inspection



The Septic Tank

- Ensure that the septic tank is level



The Septic Tank

- Inlet:

The sanitary 'T' needs to extend 4 inches above and 12 inches below the water surface; should be accessible from the manhole



- Outlet:

An effluent filter (with the arrow pointing toward the outlet) must be installed; should be accessible from the manhole



The Septic Tank

- Access to the manholes needs to be within 6 inches of finished grade. Install risers if necessary to make this possible.



The Septic Tank

- Ensure the pipe between the tank and the D-box is supported by natural ground or compacted fill



The D-box/junction box

- Ensure the D-box/junction box:
 - is level
 - is on a stable surface
 - is installed so that the inlet is at least 1 inch above the outlet(s)



Trenches - Spacing

- Needs to be a minimum of 5 feet
- Must meet or exceed the spacing on the approved As-built plan
- Measured between nearest sidewalls



Trenches

- Must be located according to the site plan (note **minor** changes on the As-Built Plan; initial and date the change)
- Need to follow the contour of the land



Trenches – Depth of Cover

- Thin-walled pipe may be used if there is **LESS than 2 feet of cover** over the disposal pipe (connecting the tank to the D-box to the chambers)



Photo shows thin-walled pipes

Trenches – Depth of Cover

- SDR 35 or equivalent pipe MUST be installed if there is **MORE than 2 feet of cover** over the disposal pipe (connecting the tank to the D-box to the chambers)



Photos show SDR 35 pipes



Cover Over Chambers

- Allow at least 9 inches over the chambers for cover
- The Construction Authorization (Form C) often sets minimum and maximum depths – stay within limits or contact the designer and Development Services for a revision



Chamber Installation

- Chambers may curve 10° in either direction at each joint without using an elbow
- Ensure the chambers follow the contour of the land
- Rake the bottom of the trench so that it is free of rocks and debris



Chamber End Plates

- Leave the chamber ends plates OFF for the inspection
- This is so the inspector can see the bottom of the trench



Observation Ports

- Need to be capped
- Ensure there are no perforations (holes) above grade
- Stabilize ports when backfilling to ensure they are straight
- Perforate below grade or install a coupler to keep it from going to the bottom of the trench



Common Installation Mistakes

- The following slides show mistakes that PDEQ inspectors commonly see in the field



Avoid This Common Installation Mistake



- Pipes in the distribution/ junction box overlap
- This prevents effluent from being evenly distributed

Avoid This Common Installation Mistake



- The pipe from the tank to the D-box is not supported by soil
- The pipe could collapse when backfilled

Avoid This Common Installation Mistake

Photo courtesy of Bob's Backhoe



- Tank lids are not removed for the inspection
- Inspectors cannot verify the presence of the sanitary 'T' or the effluent filter

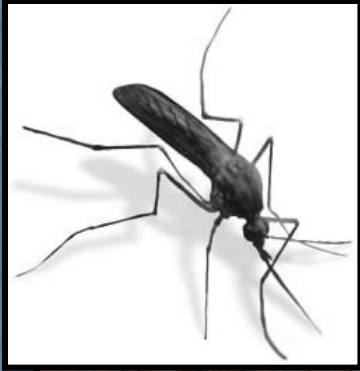
Avoid This Common Installation Mistake



Photo courtesy of Bob's Backhoe

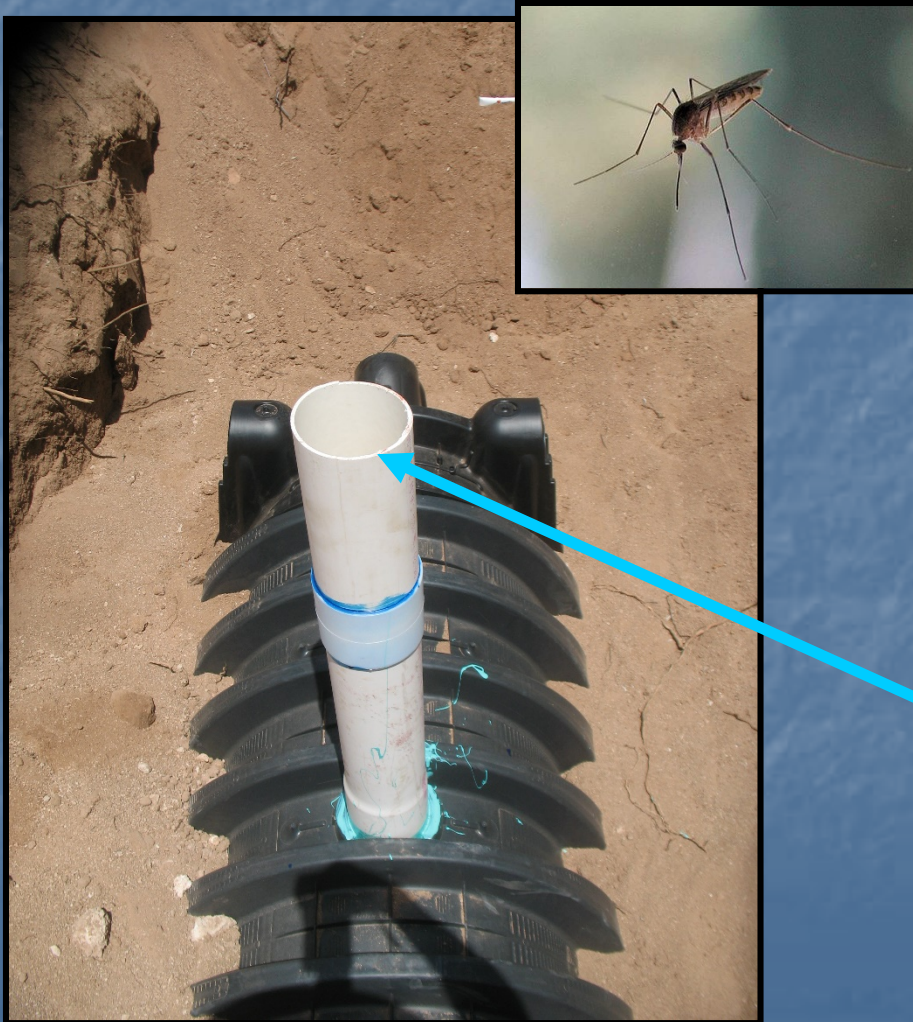
- Tank is not filled and the watertightness paperwork is not completed at the time of the inspection

Avoid This Common Installation Mistake



- Perforations (holes) in the observation port are present above grade
- This can contribute to disease-carrying organisms

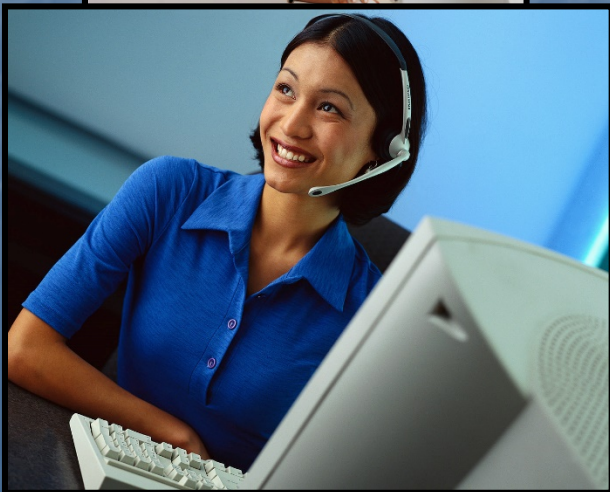
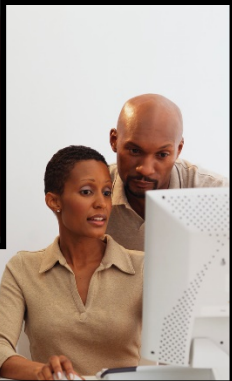
Avoid This Common Installation Mistake



- Observation ports are not capped
- This can contribute to disease-carrying organisms

Online

https://webcms.pima.gov/government/environmental_quality/



- What's new?
- Forms
- Regulations
- Checklists
- Links
- Contact information

Contact

Pima County Department of Environmental Quality

33 N. Stone, 7th floor
Tucson, Arizona 85701
520-724-7400

- https://webcms.pima.gov/government/environmental_quality/