

**Virginia Department of Health
Chamber and Bundled Expanded Polystyrene
Technical Advisory Committee (CBEP TAC)
November 23, 2015 Meeting Summary**

List of attendees at central location:

Advisory Committee Members

Dave Lentz Cody Vigil Curtis Moore

VDH Staff and Guest

Lance Gregory Marcia Degen

List of attendees at remote location:

Advisory Committee Members

Jim King Jeff Walker Scott Honaker

Mr. Vigil sat in place of Tim Woods as a representative for Infiltrator Water Technologies. Mr. King sat in place of Brian Parker as a representative for Eljen Corporation. Mr. Moore sat in place of Pam Pruett as a representative for the Virginia Onsite Wastewater Recycling Association.

Administrative.

Mr. Gregory welcomed the committee and guest, and opened the meeting by discussing the regulatory process and expectations for the meeting.

Current status of regulations and process moving forward.

Mr. Gregory then presented an update on the status of the proposed regulations. The regulations for gravelless material and drip dispersal are in the last stage of the process. A 60 day public comment period on the proposed regulations ended on October 26, 2015, and the agency now needs to develop the final regulations. The emergency regulations for gravelless material and drip dispersal were set to expire in September of 2015, however, Governor McAuliffe granted an extension to March of 2016. In order to have final regulations in place before the emergency regulations expire, the agency needs to have the final regulations approved by January 20, 2016.

Review malfunction assessment data.

Mr. Gregory then provided a PowerPoint presentation on malfunction assessment data collected in 2015 (see attached). Malfunction assessments are performed by both VDH staff and private sector professionals, and those assessments are entered into the Virginia Environmental Information System (VENIS) database. A review of available data found that the causes of failure were similar among gravel trench systems and gravelless material systems. However, the

data set is small, so it is difficult to make any concrete conclusions regarding any particular system type. For example, there were three times as many gravel trench systems that failed in 15 years or less when compared to gravelless material. However, the total number of gravel and gravelless systems installed over that time is unknown to be able to determine a failure rate for each system type. Mr. Gregory identified several needs to improve data analysis for system malfunctions: 1) need to revise the VENIS database and paper malfunction assessment form to mirror each other; 2) need to assure that all terms used are clearly defined for VDH staff and private sector professionals; and 3) a need for additional legacy data entry into VENIS to fully assessment malfunction data.

Review public comments.

Next the CBEP TAC discussed comments received during the public comment period. The CBEP TAC first discussed the following comment from Nan Gray:

“Why not just say 20,000 pound crush strength for gravelless pipe, instead of H-10 or H-20 (AASHTO) (12VAC5-610-930-F.2.F)”

CBEP TAC member commented that the H-10 and H-20 standards are derived from International Association of Plumbing and Mechanical Officials (IAPMO) and American Association of State Highway and Transportation Officials (AASHTO) standards, and that such standards are more appropriate than establishing an arbitrary crush strength number.

Next the CBEP TAC discussed a second question from Mrs. Gray asking:

“Why is gravelless area less than gravel area in df size, what justifies it? (Table 5.4 and text – 950.D.2)”

CBEP TAC members commented that this issue was discussed in great detailed during the initial CBEP TAC meetings. Gravelless material have been approved for use by VDH for more than 20 years, in some cases at an even greater reduction in area sizing than is provided in the proposed regulations.

Mr. Lentz commented that section 448 of the Sewage Handling and Disposal Regulations (the Regulations) directs VDH to include system and components approved by VDH through policy into the Regulations.

Next, the CBEP TAC discussed several public comments from Mr. Walker. The first comment states:

“VDH OSE designs include specifications which provide a 25% reduction in area for infiltration with a substitution worded as follows: Gravelless material may be used, in lieu of gravel and pip, with the approved distribution area in accordance with Table 5.4 of 12VAC5-610. If gravelless material is used the distribution box location remains the same.

This statement leave critical factors open to interpretation. Please address the following examples:

- 1. To date VDH construction permits do not offer guidance on specifications for corresponding alterations in systems designed with pump or siphon dosing.”*

Mr. Walker stated that his question is asking who is responsible for the alteration of the pump design to reflect the change in area or number of trenches.

Mr. Honaker commented that the variation in the pump dosing would be very mirror for most single family systems, even when using enhanced flow.

Dr. Degen presented a suggested to amend section 930.F.8 of the proposed regulations to state: the certifying licensed professional engineer or onsite soil evaluator shall document the substitution and related design changes on the inspection report submitted in accordance with 12VAC5-610-330.

Mr. Walker commented that the changes should be approved by the designer prior to installation.

Several CBEP TAC members commented that VDH cannot get into contract disputes between and installer and the designer if prior approval of a change is not provided. Additionally, the private sector designer does not have to approve a change to their design.

Next the members discuss several additional comments from Mr. Walker:

“2. The statement does not clarify whether the selection of materials is made by a contractor, a homeowner, or the designer (PE or OSE).

How does the VDH intend to amend policy requiring design of onsite systems to conform with the engineering responsibilities of the licensed designer?

3. The onsite wastewater system design is under the auspices of the professional engineering the system, this includes source, conveyance and dispersal.

Does the substitution of specified generally approved products require endorsement by the designer subsequent to the issuance of the permit, and does the public have any reliable means to discern the responsible charge for this alteration?

4. To date contractors have been expected to counsel their clients regarding the installation of a onsite sewage system with only 75% of the prescribed surface area. The manufacturer claims:

Chamber systems are easy to install: Engineered for strength and performance, they have greater design flexibility including a smaller footprint as compared with stone and pipe, and are made from recycled materials. These advantages of Infiltrator chambers add up to cost savings on labor, material and time savings on the job.

How will the VDH assure the public that the consumer has been advised regarding increased area loading rate, and risk of reduced system performance?

Mr. Walker commented that the second question was raised to avoid getting in the middle of a dispute between the contractor, designer, and owner. Mr. Walker mentioned the third question was similar to questions one and two. Mr. Walker commented, regarding his fourth question, that his concern is VDH does not counsel homeowners regarding the selection of system options.

Again it was mentioned that private sector designer do not have to approve a change to their design. Additionally, VDH has a minimum set of standards and staff must accept system that meet those standards.

Mr. Walker's fifth public comment was:

"5. VDH central staff responded to request for gravelless system performance statistics with the following statement: there is not currently a standard VENIS report for the malfunction report that I can pull to provide you with the requested sample data.

In light of the record of usage dating to 1991, and controversy amongst some designers in disparate regions when will VDH provide a public accounting of systems in place, and malfunction assessment associated with repair statistics?"

Mr. Walker commented that Mr. Gregory's presentation on the malfunction assessment addressed this question.

Next the CBEP TAC discussed the following comment from Bob Marshall:

"The Board of Health may want to incorporate language for utilization of submersible turbine pumps and do away with the narrowly worded requirements under 12VAC5-610-880.B.6.

6. Pumps. All pumps utilized shall be of ~~the open-face~~ centrifugal type designed to pump sewage."

The committee agreed the comment was outside of the scope of the regulatory action, but also agreed the comment should be considered in the future.

The committee also agreed that several public comments from Harold Mathews (minimum separation between a header line and trench bottom, minimum height of a control panel) are also outside of the scope of the regulatory action. The committee also felt both of Dr. Mathews comments should be considered in the future.

Additional comments and proposed revisions from TAC.

A member of the committee commented that the proposed regulations do not make it clear that an installer must follow a manufacturer's installation manual. There was a suggestion to clarify 930.F.4 to add "installation shall be in compliance with the approved installation manual."

Mr. Moore suggested adding the term "each" prior to "absorption trench" in section 930.F.3.

Adjourn

**Virginia Department of Health
Chamber and Bundled Expanded Polystyrene
Technical Advisory Committee Meeting**

Date: November 23, 2015
Time: 1:00 pm to 4:00 pm
Location: Madison Building, 5th Floor Main Conference Room
109 Governor's Street, Richmond, VA 23219

Meeting Agenda

2. Administrative. (5 minutes)
 - A. Welcome.
 - B. Expectations for the meeting.
 - C. Review and approve agenda.
3. Current status of regulations and process moving forward. (5 minutes)
4. Review malfunction assessment data. (15 minutes)
5. Review public comments. (25 minutes)
6. Review proposed regulations and address public comments. (30 minutes)
7. Break (10 minutes)
8. Additional comments and proposed revisions from TAC. (20 minutes)
9. Prioritize TAC comments and proposed revisions. (5 minutes)
10. Discuss TAC comments and proposed revisions. (55 minutes)
11. Moving forward, future TAC meetings. (10 minutes)
12. Adjourn

Malfunction Report Data

How We Collect Malfunction Data - VDH

Sewage Malfunction Report - IBM Notes

File Edit View Create Actions Text Tools Help

Welcome Menu | Ei Manager | OEHS EHS Live - Main | Sewage Treatment System for... | Sewage Malfunction Report

Save Done Cancel Parent Document

Malfunction Report - Residential

Premises Information		
Approximate Age Of Building F 16 years	Size Of Lot F 16	Size Of Residence F 16
Facility Type Construction Permit		
Residential Type Single Family	# Of Bedrooms (Including All Suites) F 3	# Of Occupants F 16
Garbage Disposal Appliance F 16	Water Softener F 16	Plumbing Problems F 16
Jacuzzi / Hot Tub F 16		

System Information		
Type Of Failure F 16	Probable Cause(s) of Failure F 16	Date System Installed 16
System Age F 16 years	Septic Tank Pump Frequency F 16	Date Of Last Pump Out
Reported Date 23-Nov-2015 16		Septic Tank Capacity F 16 gallons
System Design F 16		Sludge Depth F 16 inches
Scum Depth F 16 inches	DO Septic Tank F 16 mg/l	DO Distribution Box F 16 mg/l
BOD ₅ (Septic Tank) F 16 mg/l		Fats, Oils and Grease F 16
Landscape Position / Offsite Water F 16		
	Date of Temporary Abatement	Date of Permanent Correction

Approximate building age in years.

Online

11:23 AM
11/23/2015

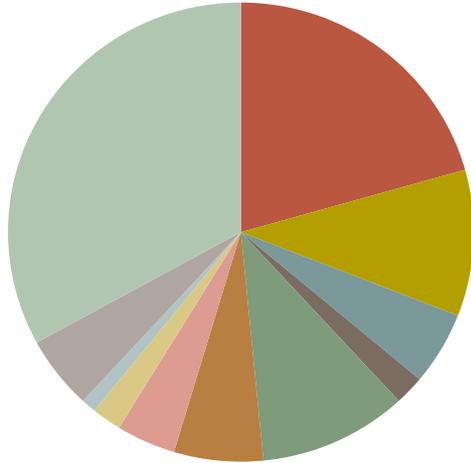
How We Collect Malfunction Data – Private Sector

- Form -
<http://www.vdh.virginia.gov/EnvironmentalHealth/Onsite/OSE/documents/pdf/Malfunction%20Assessment.pdf>
- Modified list for “cause of failure”.
- Stated in January, 2015.

Top 5 Causes of Failure – Reports Enter in VENIS in 2015

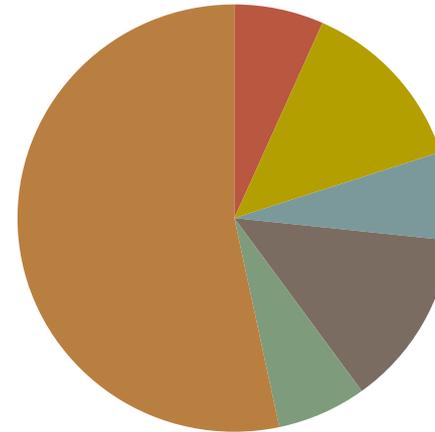
All Systems	Gravel and Pipe	Gravelless
Hydraulic Overload	Damage/Collapsed Piping	Hydraulic Overload
Damage/Collapsed Piping	Hydraulic Overload	System Undersized
Install Error	Install Error	Root Intrusion
Soil Clogging, System Undersized (Tie)	Soil Clogging	Soil Clogging
Root Intrusion	System Undersized, Insufficient Isolation to Water Table (Ties)	Damage/Collapsed Piping, Install Error (Tie)

Cause of Failure All Systems ≤15Yrs Old



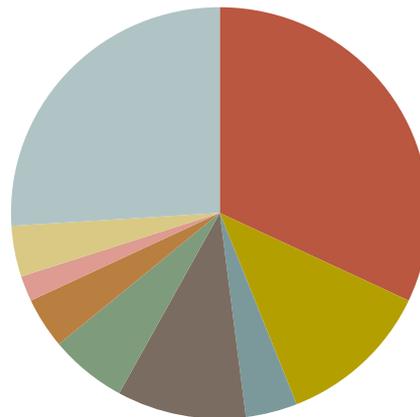
- Damaged/Collapsed Piping System
- Hydraulic Overload
- Installation Error
- Lack of Maintenance
- Not Listed
- Root Intrusion
- Septic Tank Failure
- Soil Clogging
- System Undersized
- Unable to Determine
- Multiple

Cause of Failure Gravelless ≤15Yrs Old



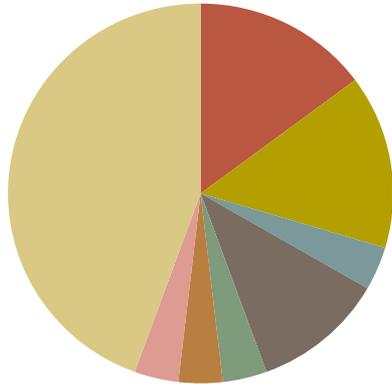
- Damaged/Collapsed Piping System
- Hydraulic Overload
- Not Listed
- Root Intrusion
- Unable to Determine
- Multiple

Cause of Failure Gravel ≤15 Yrs Old



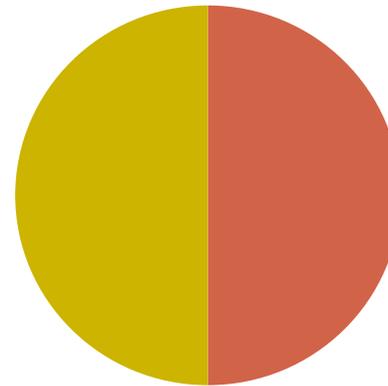
- Damaged/Collapsed Piping System
- Hydraulic Overload
- Installation Error
- Not Listed
- Root Intrusion
- Septic Tank Failure
- Soil Clogging
- Unable to Determine
- Multiple

Cause of Failure All Systems ≤5 Yrs Old



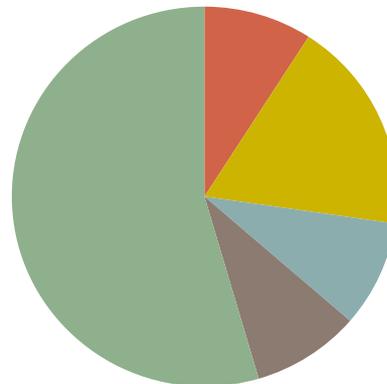
- Damaged/Collapsed Piping System
- Not Listed
- Hydraulic Overload
- Installation Error
- Lack of Maintenance
- Root Intrusion
- Unable to Determine
- Multiple

Cause of Failure Gravelless ≤5Yrs Old



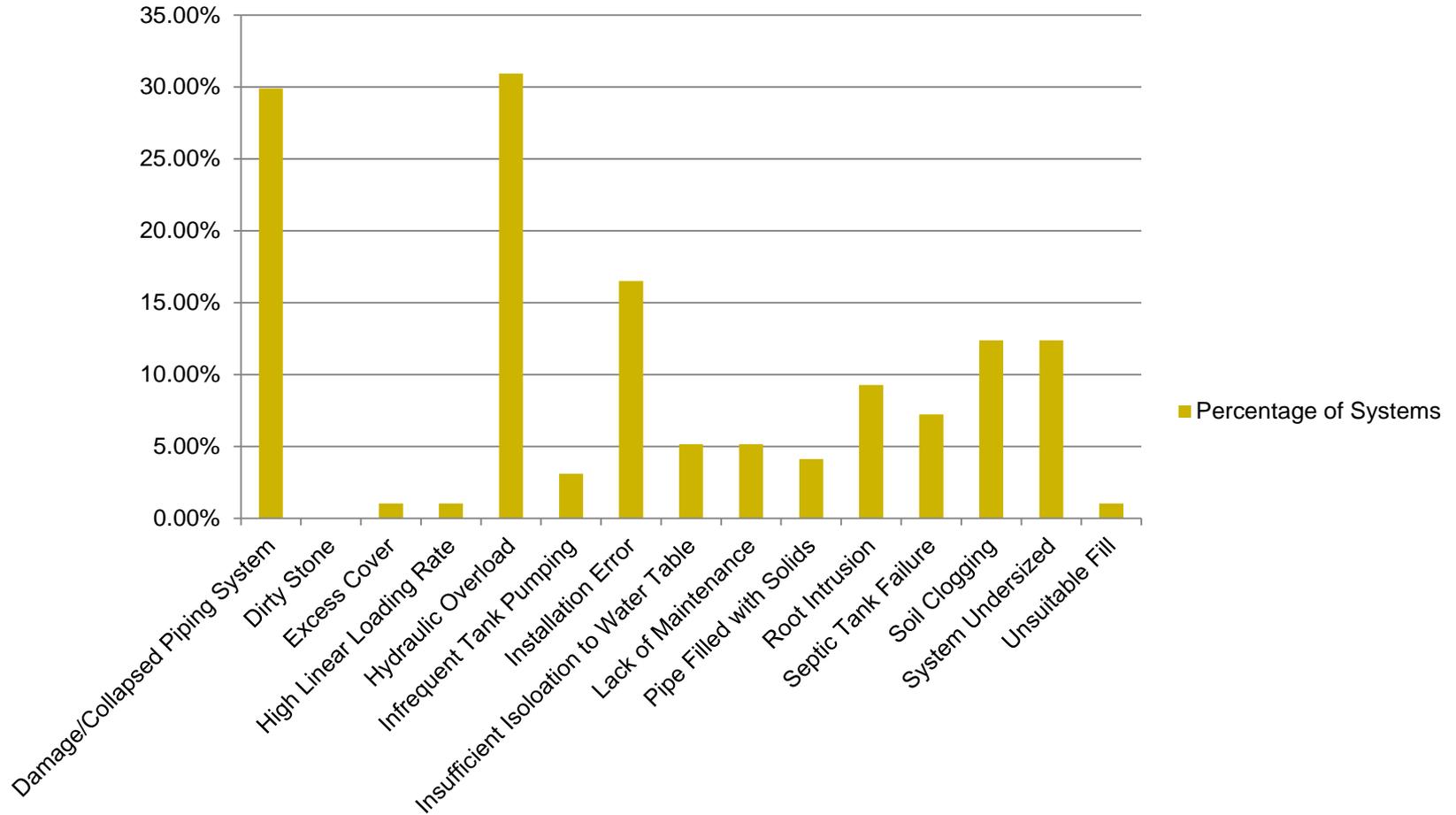
- Root Intrusion
- Multiple

Cause of Failure Gravel ≤5 Yrs Old

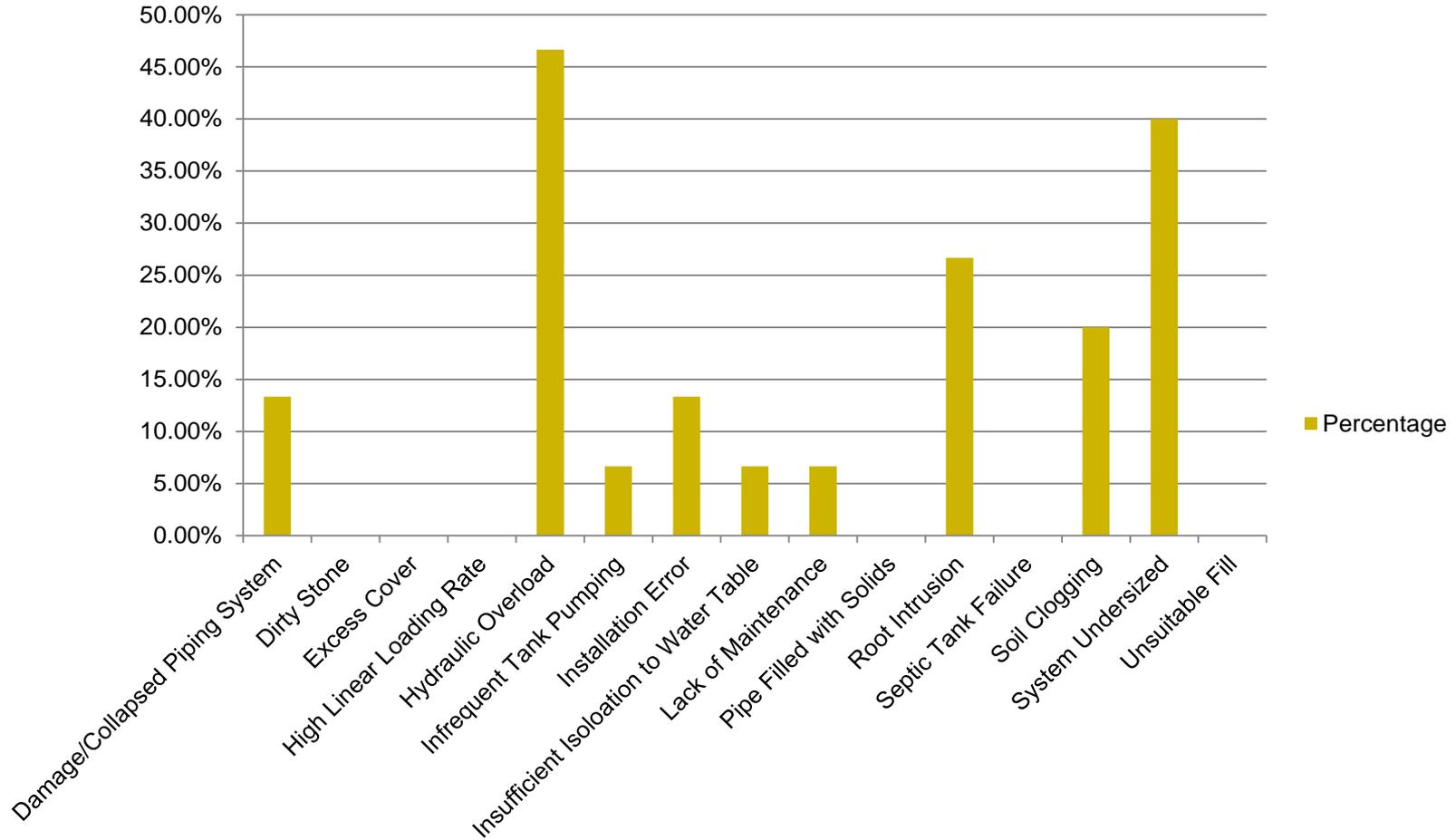


- Damaged/Collapsed Piping System
- Not Listed
- Installation Error
- Unable to Determine
- Multiple

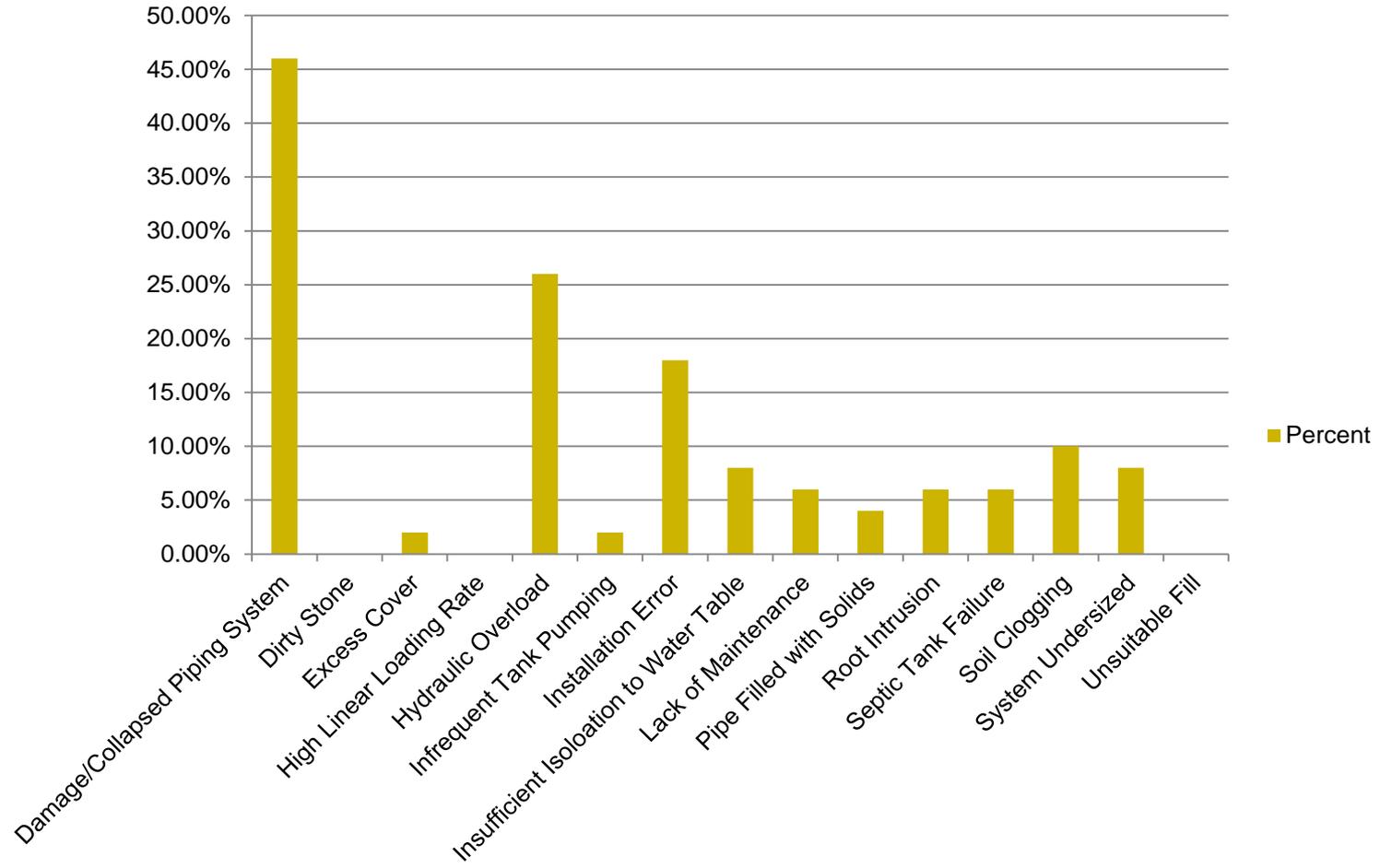
Cause of Failure by Type All Systems ≤15 Yrs Old



Cause of Failure Gravelless ≤ 15 Yrs Old



Cause of Failure Gravel \leq 15 Yrs Old



Conclusions

- Small data set; cannot make any concrete conclusions.
- Need to revise VENIS and paper form to mirror each other.
- Need to present clear definition/meaning for causes of failure.
- Need additional legacy data entry to fully determine failure rates for a given factor (e.g. location, system type, etc.).