

**SEWER OPERATIONS POLICIES  
CITY OF TALLAHASSEE – UNDERGROUND UTILITIES AND PUBLIC  
INFRASTRUCTURE**

---

SUBJECT:

**GRAVITY SEWER SERVICE  
LATERAL POLICY**

TOTAL PAGES: 17  
EFFECTIVE DATE: 1/1/1991  
LAST REVISION: 7/20/2016

---

**A. SCOPE AND APPLICABILITY**

This policy establishes a protocol for evaluating, repairing, and determining liability for stoppages in sewer laterals. In addition, this policy provides guidance for determining the extent of monetary reimbursement for sewer work and property damage. The information included in this policy is associated with the gravity sanitary sewer system throughout the collection system and the low pressure sewer system in Killlearn Lakes. This policy shall apply to City sewer customers and City sanitary sewer maintenance and repair personnel, and shall be utilized by the Risk Management Department in accordance with City Commission Policy 200.

**B. STATEMENT OF APPLICABILITY**

In the event that customer sewer service is interrupted due to a stoppage in the lateral between the sewer main and the house, the City and other involved parties must refer to the Gravity Sewer Service Lateral Policy, included as ATTACHMENT A.

**C. DEFINITIONS**

The following words, terms, and phrases, when used in this policy, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning.

1. “City easement” – an easement granted to the City for construction, maintenance, and repair of sanitary sewers, alone or in addition to other utility services.
2. “Qualified customer” – a sewer customer who has the skills and equipment necessary to perform lateral stoppage investigations and utilize lateral maintenance techniques.
3. “Lateral” – the sanitary sewer pipe, including the cleanout stack and cap, that connects plumbing at a customer location to the City main.
4. “Lateral maintenance techniques” – maintenance practices (e.g. rodding, jetting, flushing) used to remove stoppages in laterals caused by roots, grease, organic matter, or other obstructions.
5. “City main” – a part of the sewage collection system owned and maintained, or accepted for ownership and maintenance, by the City that is located within a public right-of-way or a City easement and is designed to accept connection of multiple sewer laterals. This does not include private systems that connect to the City main.

## **D. EXCEPTIONS**

## **E. PROCEDURES**

1. Gravity Sewer Service Lateral Policy: ATTACHMENT A

## **F. ADMINISTRATION**

Water Resources Engineering and Water Construction & Operations will utilize this policy in day-to-day operations. Risk Management will utilize this policy in accordance with City Commission Policy 200.

[<https://www.talgov.com/uploads/public/documents/commission/pdf/policy/200.pdf>]

**ATTACHMENT A**  
**GRAVITY SEWER SERVICE LATERAL POLICY**

**GRAVITY SEWER SERVICE LATERAL POLICY**  
**(Effective January 1, 1991; Revised July 11, 2016)**

**1. General**

- a. The City will perform routine, regular maintenance and repairs of all City mains. This includes alleviating problems caused by clogging from solids or grease, root intrusion, hydraulic overload, broken or cut pipe, improper grade, or deteriorated pipe.
- b. The City shall not be responsible for repair of, or for related damages resulting from, cave-ins or settling of roadways on private streets, except on projects that were constructed or directly contracted by the City.
- c. The City shall not be responsible for clearance of, or for damages resulting from, backups in any part of a lateral that might have indirectly resulted from a stoppage in the City main, unless the main stoppage was caused by some identifiable action or inaction by the City, such as faulty construction by City forces or by a City contractor that resulted in the lateral blockage, or an inadequate repair to or maintenance of a City main by City forces or a City contractor.
- d. The customer has exclusive control over discharges into his lateral; therefore, as a condition of sewer service, the customer accepts responsibility for, and shall pay all costs and expenses of, maintenance and repair of the lateral up to and including the connection to the City main, even if the lateral is installed within a public right-of-way, a City easement, or under pavement.
- e. Whenever this policy provides for the City to make payment to a customer or plumber for the cost of plumbing services, the plumber's rates and hours must be reasonable and comparable to those normally charged by the plumber to private entities, as determined by the City. All references to such payment shall be deemed subject to the foregoing limitation. The invoice from the plumber must specify the date, address, work done, hours worked, hourly rates, and materials.

**2. Procedure for Evaluation and Repair in the Event of a Stoppage**

- a. Upon notification of a sewer stoppage, the City, through conversation with the caller, will try to determine the extent and location of the problem. The customer will be instructed to contact a plumber if there is no indication that the problem is in the City main. A qualified customer may act as his own plumber.

- b. Once onsite, the plumber or qualified customer will make an initial determination as to whether the problem is located in the City main before doing extensive work on the lateral. If any of the common indicators of a main stoppage, such as “more sewage overflowing than the building should be discharging” or “surcharging or overflowing of a manhole” is evident, assistance should immediately be requested from the City. In such cases, it is not necessary for the plumber or qualified customer to remain at the site until City crews arrive.
  - (1) In the event that a plumber makes an on-site determination, and the City confirms, that the stoppage is located in the City main, the City, subject to Section 1.e, will pay the plumber or reimburse the customer for services performed by the plumber in making the determination.
  - (2) In the event a qualified customer makes an on-site determination, and the City confirms, that the stoppage is located in the City main, the City will pay for equipment rental charges the qualified customer incurred in making the on-site determination. The qualified customer must provide rental invoices, the date of which must be consistent with the date of the stoppage. The City will not pay for labor expended by the qualified customer or for use of equipment owned or borrowed by the qualified customer.
- c. If it is determined that the stoppage is in the lateral, and that the stoppage can be removed by using only lateral maintenance techniques, the customer will be responsible for such removal and for payment of all associated costs, including any repairs to the lateral. The City will not pay the plumber or reimburse the customer for any costs in such event.
- d. If it is determined that the stoppage is in the lateral and cannot be removed by using only lateral maintenance techniques, the plumber or qualified customer will stay on-site to demonstrate to the City that the stoppage cannot be removed using lateral maintenance techniques and to allow the City to electronically locate the stoppage for clearance and, if warranted pursuant to (1) and (2), below, repair of the lateral.
  - (1) As noted in Section 1.d., above, the customer is responsible for maintenance of the lateral; therefore, if it is determined that the stoppage is located in an unpaved public roadway or unpaved public easement; or located more than five feet outside the edge of pavement or back of curb on a public street, the plumber or qualified customer shall make repairs to the lateral, and the customer shall be responsible for all costs associated with removal of the

stoppage and repair of the lateral. An exception to this would be if the damage to the lateral was caused by the City or a City contractor, in which case the City shall be responsible for the repair, and the City, subject to Section 1.e., will pay the plumber or reimburse the customer for plumber's services performed in locating and attempting to clear the stoppage.

- (2) (a) Notwithstanding the customer's responsibility for the lateral noted in Section 1.d., above, if it is determined that the stoppage is located within a public right-of-way and under pavement, or within five feet of the edge of pavement or back-of-curb on a public street, the City will make repairs to the lateral for the purposes of protecting the roadway. If it is determined that the stoppage was caused by some action or inaction of the City or a City contractor, the City, subject to Section 1.e., will pay the plumber or reimburse the customer for services performed by the plumber in evaluating the stoppage and for use of reasonable lateral maintenance techniques to clear the stoppage. In cases where a City main is located in a City easement that is located within a private street, the City will not make repair to the lateral.
  - (b) If the blockage is determined to have been caused by an obstruction under the control of the customer or a failure of the lateral, then the City will not be responsible for the plumber's or qualified customer's costs. If the stoppage is caused as a result of negligence of the plumber or customer, the cost to the City of removing the obstruction shall be charged to the plumber or customer.
- (3) If a defect or stoppage in the lateral is located off the customer's property, but within a City easement, the customer retains the responsibility for maintenance of the lateral. The City, to the extent permitted, assigns to the customer the same rights which the City has for maintenance in that area. The customer must adhere to the terms of the easement, especially with respect to restoration. If it is determined that the stoppage is City responsibility, the City, subject to Section 1.e, will pay fair and reasonable plumber's charges for evaluation of the stoppage and work on the lateral.
  - (4) The City provides a warranty for materials and workmanship for one year from the date of acceptance of sewer mains and lateral stub outs constructed by the City, or constructed by a City contractor, or constructed by another contractor and accepted by the City for ownership and maintenance. This

warranty shall include payment or reimbursement of the plumber's or customer's costs, subject to Section 1.e.

### **3. Improper Slope**

- a. If it is suspected that a stoppage or repeated stoppages are caused by improper slope of that part of the lateral that is located in a public street right-of-way or City easement, the following steps shall be taken:
  - (1) The plumber or qualified customer shall expose the lateral at the building and at the public right-of-way or City easement boundary.
  - (2) The City will establish the elevations of the pipe at those two points, and at the point of connection to the City main.
  - (3) If these elevations reveal that the slope of the lateral is inadequate for gravity flow (normally 1/8" vertical drop per foot of horizontal run), and if adjusting the slope of the lateral within the public right-of-way or City easement will correct the problem, the City will make that adjustment.
  - (4) If it is determined that the slope of the lateral within the public right-of-way or City easement was the cause of the stoppage City, subject to Section 1.e, will pay fair and reasonable plumber's charges for removing the stoppage and exposing the lateral. In the case of a qualified customer, the City, subject to Section 1.e., will pay for equipment rental charges the qualified customer incurred in making the on-site determination. The qualified customer must provide rental invoices, the date of which must be consistent with the stoppage. The City will not pay for labor or for use of equipment owned or borrowed by the qualified customer. The City will make repairs to the lateral for the purposes of protecting the roadway.
- b. If it is suspected that a stoppage or repeated stoppages are caused by improper slope of that part of the lateral that is located beyond five feet from the edge of pavement or back-of-curb on a public street, any required adjustment of the lateral within that area will be the customer's responsibility, and may require installation of a pump system if it is physically not possible to provide the necessary slope for gravity flow. The customer should consult a licensed plumber for appropriate remediation.

#### **4. Property Damage Reimbursement**

- a. The City will only pay or reimburse the customer for property damage to the interior of a habitable structure caused by backup from a stoppage and only in the following cases:
  - (1) A sewer overflow resulted from a stoppage in the City main that was caused by one of the reasons listed in Section 1.c.
  - (2) The lateral was under warranty by the City, and a workmanship or material failure issue arose within the warranty period.
  - (3) The stoppage was caused by the improper slope of the lateral within the public right-of-way or City easement, and the segment of the lateral with improper slope was constructed by the City or a City Contractor.
- b. The City will not be liable for any stoppages in the lateral, back-ups onto property, or resulting damages caused by a blockage in the City main if it is determined that the main blockage was caused by non-City construction debris, damage to the City main caused by third parties, excessive grease or solids from a lateral, foreign objects, stormwater surcharge, or any other cause beyond the reasonable control of the City.
- c. If Underground Utilities determines that the stoppage meets the criteria of Section 4.a, above, and that property damage has resulted, Underground Utilities will provide the customer with a “Clean-Up Authorization Letter.” If a determination of responsibility cannot be made upon initial report of a stoppage or backup, the customer should immediately initiate the clean-up process, as delays may result in greater property damage. The customer has a responsibility to mitigate any and all damages. It is recommended that the customer consult with a contractor certified in the extraction of contaminated water for proper remediation. If liability is accepted by the City at a later date, only the initial damages will be considered for compensation. The City will not consider additional damages caused by a delay in repairs or a failure to mitigate.
- d. After the customer has received the “Clean-Up Authorization Letter”, the customer will be referred to the Risk Management Division in the Office of the City Treasurer-Clerk. The Risk Management Division will maintain administrative control over the claim process and resolution of the claim.
- e. When a stoppage is identified and it is determined that it is the City’s responsibility, the City will not be responsible for property damage or the plumber’s or qualified customer’s costs from any prior stoppages, even if the defect might have been a contributing factor to those stoppages.



## **SPECIAL CONDITIONS FOR LOW PRESSURE SYSTEM SERVICE LATERALS**

The City of Tallahassee is responsible for the operation and maintenance of a low pressure sewer system (LPS) in the Killlearn Lakes Plantation Unit 1 and Unit 2 subdivisions. A City-owned and maintained pressure pipe (referred to as “force main”) serves as the collection system for the LPS. The force main is mostly located within the public streets throughout the subdivision and along Bannerman Road. There are a few exceptions where the force main is located within dedicated City easements. Grinder pump stations are located on private property in the vicinity of the structure being served. Laterals connect the grinder pump stations to the force main.

### **1. General**

- a. The customer is responsible for equipment, piping, and appurtenances from the connection at the structure being serviced up to, and including, the check valve located at the connection to the LPS force main.
- b. The City is responsible for all of the low-pressure force main piping, including the corporation stops, that are located immediately downstream of the homeowner’s check valve.
- c. Killlearn Lakes Plantation is located outside the Tallahassee City Limits. For this reason, the Leon County Building Official is responsible for review and approval of the customer’s equipment, piping, and appurtenances, including review of data used to select a properly-sized pump. Design operating conditions for pump selection are provided in Table E.1., Killlearn Lakes Plantation LPS Operation and Maintenance Manual, which is on file in the City and County offices.
- d. Typical problems associated with a LPS collection and transmission system can generally be classified into the following three categories: grinder pump station problems, lateral problems, force main problems.

### **2. Procedure for Evaluation and Repair in the Event of a Sewer Stoppage**

- a. Upon notification of a sewer stoppage, the City, through conversation with the caller, will try to determine the extent and location of the problem. The customer will be instructed to contact a plumber if there is no indication that the problem is in the force main.
- b. The plumber will determine if the problem is associated with the grinder pump before requesting City assistance.

- (1) Potential problems associated with grinder pump stations can be found in Appendix A.
  - (2) If a stoppage or backup is caused by poor performance or failure of a grinder pump and the poor performance or failure of the grinder pump was not the result of improper operation of the LPS force main, the customer will be responsible for remedial action and any incurred costs.
  - (3) When the customer experiences a problem with the grinder pump station, City staff should be made aware of the situation so that customers can be properly notified about the cause and future prevention of such problems.
- c. If the problem is not associated with the grinder pump, the plumber can perform a pressure evaluation to determine whether the problem is isolated to the lateral.
- (1) Problems associated with the lateral are generally limited to lateral pipe failure (broken, damaged, clogged) or a blocked or clogged check valve.
  - (2) Repair of a broken, damaged, or clogged lateral or check valve between the grinder pump station and the connection to the force main is the responsibility of the customer.
  - (3)
    - (a) Notwithstanding the customer's responsibility for the equipment, piping, and appurtenances noted in Section 1.a, above, if it is determined that the stoppage is located within the public right-of-way and under pavement, or within five feet of the edge-of-pavement or back-of-curb on a public street, the City will make the repair for the purposes of protecting the roadway. If it is determined that the stoppage was caused by some action or inaction of the City or a City contractor, the City, subject to Section 1.e. of the Gravity Sewer Service Lateral Policy, will pay the plumber or reimburse the customer for services performed by the plumber in evaluating the stoppage and for use of reasonable lateral maintenance techniques to clear the stoppage. In cases where a force main is located in a City easement that is located within a private street, the City will not make repair to the lateral.
    - (b) If the problem is determined to have been caused by an obstruction under the control of the customer or a failure of the lateral, then the City will not be responsible for the plumber's or qualified customer's costs or damages to the customer's property. If the stoppage is caused

as a result of negligence of the plumber or customer, the cost to the City of removing the obstruction shall be charged to the plumber or customer.

- (4) If a defect or stoppage in the lateral happens to be located off the customer's property, and is within a City easement, the customer retains the responsibility for maintenance of the lateral. The City to the extent permitted, assigns to the customer the same rights which the City has for maintenance in that area. The customer must adhere to the terms of the easement, especially with respect to restoration. If it is determined that the stoppage is City responsibility, the City will pay fair and reasonable plumber's charges for evaluation of the stoppage and work on the lateral.
- d. If it is determined that the problem may be associated with the force main, the City should be contacted immediately to evaluate the system.
- (1) Repair of problems associated with the LPS collection system are the responsibility of the City.
  - (2) In the event of a LPS collection system problem, the City should ensure that impacted customers are properly notified.
  - (3) If it is determined that a blockage or stoppage in the force main resulted in damage to a customer's grinder pump station, the City, subject to Section 1.e. of the Gravity Sewer Service Lateral Policy, will pay the plumber or reimburse the customer for fair and reasonable charges for evaluation of the stoppage and work on the lateral and pump. In the case of a qualified customer, the City, subject to Section 1.e of the Gravity Sewer Service Lateral Policy, will pay for equipment rental charges the qualified customer incurred in making the on-site determination. The qualified customer must provide rental invoices, the date of which must be consistent with the stoppage. The City will not pay for labor expended by the qualified customer or for use of equipment owned or borrowed by the qualified customer. The City also will reimburse the plumber's fee associated with installation of a new grinder pump and compensate the customer for the value of the existing grinder pump with appropriate depreciation.

**“IMPROPER SLOPE”**

_____	_____
Customer’s Name	Date
_____	_____
Mailing Address	Street Address
_____	_____
City            State    Zip Code	Telephone

Re: Sewer Back-Up  
(Account No. \_\_\_\_\_)

Dear Customer:

We are sorry you have experienced a problem with your sewer service. Upon inspection, we have determined that there is a defect in the sewer service pipe that connects your property to the City’s sewer main. The service pipe is commonly called a “lateral”, and the part of your lateral that is located within the public street right-of-way or City easement was installed at less than minimum slope.

The box checked below indicates what must be done to correct the defect:

- The part of your lateral that lies within the public street right-of-way or City easement will be adjusted at City expense so that minimum recommended slope is achieved. Adjustment of the slope for the part of the lateral that lies on your property is not needed.
- The part of your lateral that lies within the public right-of-way or City easement can be adjusted by the City so that minimum recommended slope is achieved; however, in order to correct the problem, you must also adjust the slope of that part of the lateral that lies outside the public right-of-way or City easement. You must contact the City to coordinate work schedules because the City cannot perform its adjustment until your plumber is prepared to adjust your lateral.
- Adjustment of the part of your lateral that lies within the public right-of-way or City easement is not possible or practical. In order to overcome the problem, a pump may need to be installed, at your expense. It is recommended you consult a licensed plumber for necessary remediation. If a repair is not scheduled within 90 days, a Notice of Violation of the Plumbing Code shall be issued.

Upon delivery of this letter, the City will assume no further responsibility for problems associated with the lack of slope.

If you desire additional information regarding the defect in your lateral, please contact (insert name) with the City Utilities. He/she can be reached at 850-891-\_\_\_\_\_.

**“CLEAN-UP AUTHORIZATION”**

_____	_____
Customer’s Name	Date
_____	_____
Mailing Address	Street Address
_____	_____
City            State    Zip Code	Telephone

**Re: Claim for Sewer Back-Up Damage**  
(Acct. No. \_\_\_\_\_)

Dear Customer:

We are sorry you have experienced a problem with your sewer service. The City of Tallahassee’s assigned claims adjuster will be contacting you in the near future to determine the extent of resulting damages, if any. However, it is important that you immediately initiate the cleaning-up process. **DO NOT** wait for the City’s claims adjuster to contact you. You may find companies specializing in this service listed in the yellow pages or on-line under “Fire & Water Damage Restoration.” The City will pay for the initial clean-up cost, provided it is done by a contractor certified in the extraction of contaminated water.

In recommending that you initiate the clean-up and agreeing to fund said initial clean-up, the City is not admitting fault nor accepting liability, nor making any financial commitment beyond the cost of initial extraction. The determination of liability will be made by the City’s Risk Management Division.

If you have any questions, please contact the City’s Risk Management Division at 850-891-8246, between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

Sincerely,

City’s Representative

## APPENDIX A

### Grinder Pump Station Problems

The following addresses some of the potential problems associated with Grinder Pump Stations.

Pump Selection – Proper pump selection is critical. Pumps that are undersized have to work harder to keep up with the flow and pressure of the system. This can often result in excess run time for the pump and/or excess heat generated by the pump motor, both of which will ultimately lead to early pump failure. Selecting pumps that are too large for the application may not cause problems for the owner of the pump, but the oversized pump may adversely affect other customers connected to the system.

Power Failure – Power failures are perhaps the most frequent and common grinder pump station problem. Power outages are most often weather related, and when a power outage occurs, the grinder pump station cannot operate unless there is an emergency backup power supply to the house/pump station panel. This is not usually a problem as most pump stations have a significant reserve capacity. However, extended outages (as with a hurricane or other natural disaster) can leave a residence without any means of household sewage disposal for several days or possibly weeks.

Power failures do not typically require a response by a plumber or electrician. However, extended outages may require that the pump station wetwell be pumped down to prevent a sewage backup into the house. Occasionally, after extended power failures, the high water alarm will activate as soon as the power is restored. The alarm will usually turn off on its own after the pumps draw down the sewage in the wetwell. If the alarm does not turn off after several minutes, then a plumber should be notified immediately.

Blockage – Blockages typically occur when inappropriate household items are disposed of into the sewer, most commonly through the kitchen sink or flushed down the toilet. The most common blockage occurs as a result of cooking grease and/or oil buildup in the pump station. As the grease and oil enter the pump station wetwell, it floats to the top of the liquid. As it cools, it also solidifies. As the solids accumulate in the wetwell over time, they tend to interfere with the operation of the liquid level controls. In extreme cases, the solid grease layer can prevent the sewage from reaching the pump, creating foul odors and eventual sewage backups into the house. Other household items can also cause blockages in the pump station. Items such as Q-Tips, cigarette butts, clothing, sanitary napkins, and even small toys often find their way into the sewer system and can interfere with the operation of the pump and cutter mechanism, causing a blockage in the

pump. Homeowners must be made aware, and frequently reminded, that these types of materials can damage their pump or cause recurring maintenance problems.

Blockages will most often require a service call to a plumber. Most pump stations will have a fail-safe mechanism to prevent overloading the pump motor if a blockage occurs, tripping a circuit breaker in order to prevent damage to the pump . A simple circuit breaker reset may be all that is required to restart the pump and clear the blockage. If the breaker trips again, then the pump must be removed from the wetwell so that the obstruction can be removed. Several typical examples of blockages and solutions are listed below:

- If the obstruction is located at the pump intake and/or cutter mechanism, the plumber may be able to remove it on site and place the pump back into service immediately.
- If the obstruction is located inside the pump, then the plumber may need to disassemble the pump in order to remove the obstruction. If this occurs, the plumber may choose to install a temporary replacement pump until the homeowner's pump can be repaired or replaced.
- If the obstruction is not located within the pump, but rather in the pump station wetwell, then the plumber will likely need to pump out the wetwell in order to identify and remove the obstruction(s).
- If the blockage is not located within the pump station wetwell, but rather in the internal pump station plumbing or lateral piping between the service shut-off valve and the pump station, the plumber will attempt to identify the location of the obstruction and clear the line if possible. If the line cannot be cleared, then a section of the line may need to be excavated in order to identify and resolve the problem.
- If the problem is isolated beyond the limits of the customer's property, then the City will be notified and City staff will be assigned to assist the plumber in identifying and resolving the problem. Excavation within the public right-of-way shall be coordinated with the City.

Pump Failure – Pump failure is not as common a problem with today's LPS systems. Advancements in technology, controls, and materials have resulted in very reliable pumps. However, there are several conditions that can contribute to a pump's failure before reaching the end of its design service life.

Defective pumps, while not common, do occur. Defects can include problems with the motor, impeller, cutting mechanism, pump seals, or pump housing. Defects of this nature are usually protected by a manufacturer's warranty. However, homeowner must rely on their plumbers for the repair or replacement of the pump in these instances.



Many of the same household items which should not be disposed of into the sewer system due to blockages can also contribute to early pump failure. Chemicals such as concentrated bleach or ammonia can cause corrosion of the pump components, resulting in early pump failure. Abrasives and certain food products (such as cat litter, egg shells, bone fragments, and even coffee grinds) can also wear down the cutter mechanism and pump impeller more rapidly. Items that contribute to frequent blockages can also contribute to early pump failure. Homeowners must be made aware, and frequently reminded, that these types of materials can damage their pump or cause a maintenance problem. A handout identifying these and other inappropriate household items is provided in Appendix H and should be made available to the homeowner when responding to every service call.

Float Control Failure – When a float switch fails to operate, there is no longer an automatic method of turning on the pump. As a built-in protection from the float switch failure, a secondary float switch is typically installed, which also operates a high water level alarm to make the homeowner aware there is a problem. When the alarm is activated, the homeowner will typically make a service call to a plumber. Homeowners who are comfortable with the proper operation of their system can easily and safely open the pump station control panel and activate a manual switch to operate the pumps until the float switch is repaired or replaced.

Discharge Pipe Failure – The piping internal to the grinder pump station is commonly rigid PVC plastic pipe. While plastic pipe is very strong and reliable, the vibration from the routine operation of the pumps can contribute to a pipe failure (most often at a pipe joint), particularly if the pipe connections are stressed during installation. Flexible hose piping, which is also common in many grinder pump stations, has significantly reduced the likelihood of failures due to vibration; however, the hoses can become brittle and fail over time.