

Bypass Pumping Form

Project Information

Project Name	
LW Project Number	
Project Location (Address or Cross Streets)	
LW Inspector Name/Number (if known)	

Contact Information

In the event of a pump failure, the auto dialer will call out to the Contractor(s) in this order:

Contact [include name, company name]	Cell Phone

Bypass Pumping Details (Information required for each bypass, if multiple will occur)

Approximate date of start (MM/DD/YEAR)	
Approximate duration of bypass activity (Days)	
Suction Manhole (MH-?)	
Discharge Manhole (MH-?)	
Distance (Feet)	
Design Flow (MGD)	
Proposed Pumps (Manufacturer, Size, Quantity Operating, Quantity on Standby)	
Pipe Materials (Manufacturer, Type)	

Attachments

_____ Description of pump around, including but not limited to:

- No. of discharge pipes,
- manifolded,
- method of installation,
- staging area for pumps,
- buried or surface piping,
- freeze protection needs,
- temporary supports or anchoring,
- sewer plugging method, and
- type of plugs

_____ Sizing calculations for bypass system, including but not limited to:

- suction and discharge elevations / manhole invert and top elevations,
- pipe sizes,
- pipe materials to be used,
- friction losses,
- flow velocities,
- pump curves showing pump operating range, and
- alarm elevations

_____ Drawing/sketch depicting bypass pumping setup, site access point

Additional Reference Information:

Where an existing public sewer is subject to being rerouted, or a manhole or fittings must be cut into a public sewer, bypass pumping may be required to transmit flow during the work. Pumping will be required, unless the flow is sufficiently small as to make detention within the system, or pump and haul practical for the entire duration of the work, including the time needed for testing. Use of newly installed pipe to convey flow is prohibited, until that pipe has successfully undergone acceptance testing and inspection.

Where bypass pumping is determined to be necessary, the following features must be incorporated into the pump-around system.

1. one standby pump, in addition to the pump or pumps sized to convey the flow
2. engine(s) or generator(s) to run the pumps
3. sufficient above ground piping to reliably convey flow to the receiving manhole
4. float system to control the pumps and provide an alarm in the event of system failure
5. auto dialer to transmit warning of alarm condition by telephone
6. an emergency response plan

For each pump-around, the installation contractor will submit a bypass pumping plan to Loudoun Water for review and approval.

Sanitary Sewer By-Pass Pump Test and Operation

The following steps depict the responsibilities and requirements for testing, operation, and maintenance for any sewer by-pass pumping operations and MH #'s for pump set up and MH #'s for discharge.

Contractor

- Submit a Loudoun Water Land Development By-Pass Pumping Form and obtain plan approval from a Land Development Engineer. This plan must identify person(s) who will be responsible for the pump operation.
- Coordinate pump installation and testing with the LW inspector.
- Install pumps and piping per the approved plan.
- Provide fuel access or fuel tanks onsite to ensure pump refueling capabilities are established.
- Provide safety fencing around suction and discharge manholes.
- Ensure suction and discharge piping is restrained and secure.
- Sewer plug must have air hose with pressure gauge extended to top of manhole.
- Clean Water Test:
 - Once the by-pass pumping system is constructed, the pumps and force main will be tested with clean water. Contractor to provide a clean water source (tank) with enough volume to allow the pumps to operate and pressurize the force main. Fill and pressurize the discharge force main while allowing the inspector time to walk and visually inspect each joint along its entire length to ensure the force main is not leaking.
- Alarm testing:
 - Contractor will provide the list of emergency contacts who will respond to alarm conditions (include in the by-pass pumping plan originally submitted).
 - Each float will be tested.
 - Prior to Loudoun Water O&M arriving onsite to observe the clean water test and alarm testing, the contractor shall program the auto-dialer and notify each emergency contact on the list that the by-pass and auto-dialer are being tested. The contractor will have all (or at a minimum, the majority) of the emergency contacts on site for the auto-dialer alarm testing.
 - **Each emergency contact must verify receiving the alarm to the contractor. Instruct them to: Do Not Acknowledge Alarm.**
- Reliability Test:
 - After the clean water and alarm testing is completed, a minimum twenty-four hour reliability test with live sewer will be conducted on the by-pass system. A longer test may be required at LW discretion, based on by-pass circumstances.
- Daily Observation/Action Requirements:
 - The contractor shall conduct daily inspections of the entire by-pass pump operation including at a minimum:
 - Clean suction hoses and remove any debris from manhole.
 - Check sewer plug pressure reading. Refill if needed.
 - Refuel all pumps.
 - Run the secondary (lag) pump.
 - Confirm alarm auto-dialer is powered and operating.

- Confirm floats operate freely.
- Inspect discharge force main to confirm it has no leaks.
- Inspect and clean discharge manhole, removing debris.
- Requirements for Freezing Weather Conditions:
 - In the event of freezing weather conditions, the Contractor shall incorporate the following at a minimum:
 - Heat tape pumps and discharge piping where appropriate.
 - Insulate pumps and piping where appropriate.
 - Provide power source to heat tape. Daily, confirm tape is functioning.
 - Inspect floats often to insure they operate freely and are not frozen to piping or other.
 - Test lag pump more frequently (minimum 2x/day).

LW Inspector

- Ensures contractor has installed the by-pass operation consistent with the approved plan.
- Coordinates inspection and testing with O&M (Rick Jacobson or Pete Lanham).
- Ensures contractor has a clean water source for testing purposes.
- Conducts testing with LW O&M.
- Communicates with O&M Admin to add sewer by-pass information to On-Call Schedule phone list.
- Performs daily, visual inspections the by-pass operation, including confirmation that:
 - Security fence is still in place
 - Suction manhole and pipe are free from debris
 - Floats operate freely
 - Discharge force main has no leaks
 - Debris has not collected in the discharge manhole which could cause a back-up.
- Communicate with O&M Admin to remove sewer by-pass information from On-Call Schedule phone list, when by-pass pumping operations are complete.