



## Lift Station Description

A lift station is an integral part of an effective sewage collection system. Raw sewage makes its journey underground in sloped pipelines that take advantage of gravity to keep costs down. This type of pipe system is commonly referred to as a gravity pipeline. In some situations, it's necessary for wastewater to enter the pipe system from a lower elevation. For the raw sewage to continue the journey towards a wastewater treatment plant, it needs to be efficiently transported to a higher elevation. This can't happen naturally for obvious reasons – it would defy the laws of gravity and physics. Fortunately, we have the wastewater lift stations to help. Eventually, the raw sewage reaches a storage container referred to as a wet well, which is essentially a holding cell that empties out once it reaches a predetermined level. While in the wet well, the wastewater is tested and carefully monitored in order to detect sewage levels. Coarse (solid) materials are removed at this stage. Once the wet well is full, a lift station pump will “lift” the sewage upwards using a pressurized sewer force main. A sewer force main is a system that consists of pumps and compressors. Its purpose is to elevate the wastewater to a higher elevation so that it can continue its inevitable journey towards treatment and recirculation.

### Lift Station components include:

- Receiving well (wet well)
- Screen or grinding to remove coarse materials
- Pumps and compressors
- Associated valves
- Electric motors
- Power supply system
- Equipment control and lift station alarm system
- Odor control and ventilation system

### Lift Station Maintenance

Sewage is a hazardous material and needs to be handled and treated as such. It is important that wastewater operators are keenly aware that lift stations require routine maintenance. Keeping a maintenance record is not only a best practice, but it's also often a legal requirement. Examples of lift station maintenance include logging and monitoring flow readings, cleaning floats, greasing motors, adding degreaser to the wet well,

deodorant blocks, and testing power supplies and backup generators. Additionally, it's important that lift station alarms be tested so the proper parties can be immediately notified in the event of any operational issues or equipment malfunctions.

**\*Sewer gases may include hydrogen sulfide, ammonia, methane, esters, carbon monoxide, sulfur dioxide and nitrogen oxides. Although many of these gases are found in the sewer, they are rarely emitted from the Lift Station.**

