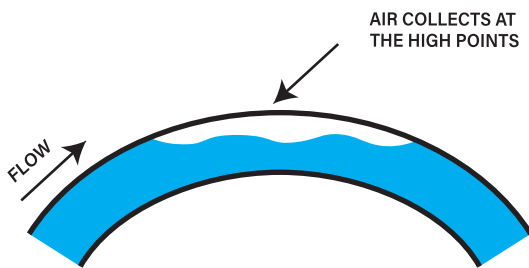




ADDRESSING AIRLOCKS IN PIPELINES

WHAT IS AN AIR LOCK IN A PIPELINE?

An air lock in a pipeline is caused when residual air within a pipeline accumulates at a high point in the pipe. Air, being lighter than water, will rise to the top and then will tend to accumulate at the highest point in the pipeline. If enough air accumulates it will reduce the volume of water that can pass through this point of the pipeline thus reducing the flow.



REMOVING EXISTING AIRLOCKS FROM PIPELINES

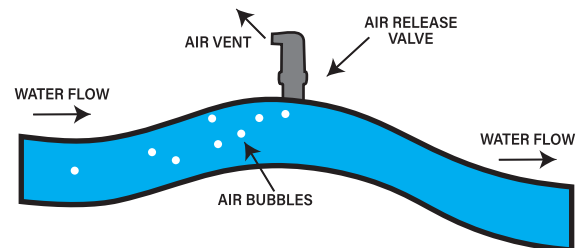
If a pipeline is installed and air locks form, there are a couple of ways to purge the air lock from the pipeline.

- Install an air release valve at the high points of the pipeline. This will remove any air from the pipeline and allow a full volume of water to travel along the pipeline.
- The air can also be purged from a pipeline if a sufficient velocity and volume of water is passed through the pipeline. The easiest way to facilitate this is to connect a pump to one end of the pipeline and flush the air out of the pipeline with the extra volume and velocity of water supplied from the pump. This is most effective if the water is pumped from the lowest point to the highest point but it can also work in the reverse direction, it just may not be as effective. A sufficient supply of water will be required at the pump site to facilitate this action.

REDUCING THE RISK OF AIRLOCKS

The best way to avoid air lock problems in a pipeline is to install the pipeline correctly. This is to install the pipeline on a level grade from start to end. Preferably this grade is from the water source at the lower end up to the discharge end (higher end). If this is not possible the pipeline can be installed with the grade from the discharge end up to the water source end, but an air release valve will need to be installed at the high end to remove any residual air that will accumulate at this point.

If a constant grade from one end of the pipeline to the other is not possible air release valves can be installed at all high points in the pipeline to remove any residual air that will accumulate at these points.



NOTE: Air release valves cannot be installed in a pump suction pipe. Any air in a suction pipe will need to be purged at the time of installation.

For help with on-farm planning and management, please contact:

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