Concurrent Sessions
Track: Septic Tanks

Tuesday, October 15, 2019
1:00 pm to 2:00 pm
Microbially Induced Corrosion in Wastewater Tanks - Clearing Myths and Providing Solutions
Claude Goguen

Introduction: Precast concrete wastewater structures have been used in onsite wastewater systems for many years because of their strength and durability. One phenomenon that can affect that tank durability is MIC or Microbially Induced Corrosion Objective: During this session, we will discuss these conditions and explain the chain of events that occur for MIC to affect the tank's performance and durability. We will focus on what constituents of today's wastewater and what tank design aspects may contribute to this phenomenon. We will examine what steps can be taken to mitigate its effects. Strategies to break the chain of MIC based on recent studies will be discussed. We will also look at when tanks that have sustained MIC related damage can be repaired, and how best to repair them. Methods and What Has Been Done: NPCA has conducted one full study on MIC and will be finishing another study this summer. We are also helping develop guidance language for ASTM (American Standards of Testing and Materials) and ACI (American Concrete Institute) Results and Final Statement: We have learned a great deal from these studies and field experience. We will explain what the industry is doing to study, understand and prevent MIC in order to continue the tradition of supplying quality tanks for the wastewater industry.

Tuesday, October 15, 2019
2:00 pm to 3:00 pm
Does Your Tank Hold Water? Explaining Watertightness for Precast Concrete Tank.
Kayla Hanson

Introduction: Precast concrete wastewater structures are essential components of onsite wastewater systems all over the world. A key performance aspect of these tanks is their ability to hold in wastewater and keep outside stormwater and groundwater from getting in. Objective: During this session, we will discuss the essential keys to precast concrete tank watertightness from the access lid all the way down to the bottom slab. We will explain how a mid-seam tank can be just as watertight and effective as a top seam tank. We will focus on riser installation and sealing, horizontal joint sealing and watertight pipe connections. Methods and What Has Been Done: We have developed best practices for watertight tanks based on many years of field experience and have shared this with thousands of wastewater industry professionals over the years. Results and Final Statement: It is essential for installers, inspectors and regulators to understand the key essentials to precast tank watertightness in order to help avoid issues in the field. We will also share recommended standards and language to include in wastewater tank regulations.

Tuesday, October 15, 2019
3:30 pm to 4:30 pm
Tank Buoyancy and Anti-Flotation Measures
David Lentz

An important consideration in the installation of septic, pump, or holding tanks is the risk of flotation due to the presence of groundwater above the bottom of the tank. The goal of this presentation is to prompt regulators, designers, and installers to think about buoyancy for the installation of any tank installation. When a rigid object such as an empty septic, pump, or holding tank is partially or fully submerged in

groundwater, an upward force is exerted on the object that is equal to the weight of the displaced groundwater. This presentation will develop two very simple models for evaluating buoyant force. Engineering controls, such as ballast systems, concrete pads, and helical anchors and associated best installation practices are evaluated. This presentation will include a discussion of Archimedes' principle, basic geotechnics of buried tanks, total and effective stress, uplift forces, buoyancy control function, and buoyancy control best practices.