

Concurrent Sessions

Track: CPOW

Tuesday, October 15, 2019

8:00 am to 9:00 am

Understanding Colorado Geology; A Powerful Tool for Site Evaluation

Matthew Hopkins

This presentation will provide a brief description of the geologic history of Colorado and an understanding of the different depositional environments that we encounter when evaluating a site. It will explain how to anticipate soils to be encountered and how to determine the best location for a STA. The presentation will address the following: A brief history of Colorado geology including mountain building, volcanism, erosion, deposition, and glaciation, describe the primary soils encountered by region and their origin; show various soil and geological resources, such as Google Earth, geological maps, soil surveys, and NWI maps, and show how to interpret them, show techniques to interpreting geology while doing a site evaluation such as vegetation, geomorphic position interpretation, and analyzing the ground surface.

Tuesday, October 15, 2019

9:00 am to 10:00 am

Design, permitting and construction of an advanced onsite wastewater treatment system capable of meeting non-detect limits for total inorganic nitrogen in Colorado.

James Cochran

JVA recently completed upgrades to an onsite wastewater treatment (OWTS) system serving a school located along the front range of Colorado southeast of Denver. The existing OWTS was not able to meet regulatory standards for nitrogen and the new system was designed to meet a 10 mg/L total inorganic nitrogen (TIN) limit prior to soil dispersal. In addition to the nitrogen limit, the new OWTS had numerous design challenges including high strength waste, episodic flow events, and permit requirements for total dissolved solids. To meet these treatment system



challenges the following treatment train was selected and implemented: packaged media biofilters filters for organic removal and two-stage nitrification, upflow denitrification filters for additional denitrification, ultraviolet disinfection for pathogen inactivation, and a soil treatment area for effluent polishing. Construction was completed in approximately eight months with minimal setbacks. The design capacity of the system is 4,500 gpd with a construction capital cost of \$590,000. The new OWTS is capable of meeting non-detect limits for TIN. This presentation provides a case study of methods to meet low total nitrogen limits in a decentralized setting with high strength waste.

Tuesday, October 15, 2019

10:30 am to 11:30 am

The Challenges of Compliance – What Happens When Enforcement is Ignored

Charlotte Hampson

The state of Colorado mandated regulations for sewage disposal systems in 1979. The State Board of Health required that all jurisdictions either adopt their own regulations for sewage disposal systems or follow the state adopted guidelines. As the industry became more advanced and the regulations changed with it, the key basis of the regulation remained the same, any structure that was to be occupied is required to be served by adequate facilities for the sanitary disposal of sewage. But what happens when a property does not comply with this most basic requirement?

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What is the danger when a property owner decidedly chooses to not comply with this requirement? This presentation will cover a currently evolving case study in the rural mountains of Colorado. Walk through regulatory side of how one property managed to remain out of compliance for years without resolution. Explore the pathway of enforcement for properties that are out of compliance and the steps one county had to take when violation letters, cease and desist orders, jail time and monetary fines were not enough.