

# 32nd Annual 2023 Solid Waste Technical Conference



**Training Day: Monday, March 13, 2023**

Granger Coolidge Road Office • 3737 Coolidge Road, East Lansing, MI

**Conference Day: Tuesday, March 14, 2023**

Kellogg Hotel and Conference Center • 55 S. Harrison Road, East Lansing, MI

**THIS CONFERENCE HAS BEEN DESIGNED WITH WASTE MANAGEMENT  
AND ENVIRONMENTAL PROFESSIONALS IN MIND.**

Whether you're in private industry, a government employee, consultant, or equipment supplier, this conference will be beneficial to you. It will give you the opportunity to:

- Network with top local specialists and professionals in the solid waste field
- Learn about emerging technologies and regulatory changes affecting the industry
- Gain information from presentations and case studies

For over 32 years, The Engineering Society of Detroit (ESD), in partnership with the Michigan Waste & Recycling Association (MWRA), has hosted this annual conference to focus on cutting-edge technological innovations and solutions related to the solid waste industry. This year's conference will feature experts in waste management practices to help attendees learn about issues related to policy, new technologies, regulatory updates and what the future holds for the solid waste industry.

#### **ACCOMMODATIONS:**

Discount overnight accommodations are available at the Kellogg Hotel & Conference Center at the rate of \$140 (plus applicable taxes) per night for Standard Double, Queen or King. To make a reservation please call (517) 432-4000 or 1-800-875-5090 and provide the code 2303ESDSOL to receive the discounted rate. The group reservation rate is based upon availability.

#### **INTERESTED IN SPONSORING OR EXHIBITING?**

Sponsorship & exhibit opportunities are available. For information, visit [esd.org](http://esd.org) or contact Leslie A. Smith, CMP @ [lsmith@esd.org](mailto:lsmith@esd.org) or 248-353-0735, ext. 152.

#### **EVENT FEES**

**Conference Day Fees** (Full day conference, continental breakfast, lunch, and reception are included in the event pricing.)

<b>\$215</b>	ESD/MWRA Member
<b>\$265</b>	Non-Member
<b>\$125</b>	Government/MEGLE
<b>\$100</b>	Student Rate (applies to undergraduate students only)
<b>\$315</b>	Join ESD at 50% discount and attend the conference

**Training Day Fees** (Full day training, continental breakfast, and lunch are included in the event pricing.)

<b>\$150</b>	ESD/MWRA Member
<b>\$190</b>	Non-Member
<b>\$100</b>	Government/MEGLE
<b>\$75</b>	Student Rate (applies to undergraduate students only)
<b>\$240</b>	Join ESD at 50% discount and attend the conference

#### **TO REGISTER**

Visit [esd.org](http://esd.org) to register online or call 248-353-0735.

**Cancellation Policy:** All cancellations must be received 72 hours prior to the event in order to receive a refund.



Attendees may be eligible for Continuing Education Credits based on hours of instruction time. Certificates of attendance are available upon request.

# 2023 Solid Waste Technical Conference

## TRAINING DAY

Monday, March 13, 2023

Granger Coolidge Road Office, East Lansing

Training day is an opportunity for solid waste professionals to obtain important training in various field sampling methods, experience advanced technological methods, and learn valuable lessons in sample collection and data management. Training day will provide instruction in both the classroom setting as well as applied field demonstrations.

Discussion topics include:

- Safety considerations at active and closed landfill sites.
- Importance of safety at tailgate meetings.
- Collecting representative data; discussion of the media, Clean Water Act, Clean Air Act and compliance with State and Federal rules/statutes.
- Water media sampling; sampling protocols, digital tools and evolving toolbox to comply with monitoring to comply with State and Federal requirements (Part 115, MPART, NPDES, IPP).
- Air and landfill gas compliance data gathering in order to comply with State and Federal requirements. SEM monitoring, Draeger Tube sampling; NSPS Method 25C, Perimeter Gas monitoring and wellfield balancing.
- Waste characterization and representative sampling from the perspective of a landfill operator. What a landfill will look for when reviewing wastes for acceptance and things a generator should consider when characterizing waste.
- The implications of poor data quality and techniques to ensure sampled representatives and laboratory quality assurance.
- Expectations and standards for data quality.
- Concepts for obtaining high quality information, rather than data to benefit operations.

Hands-on demonstration sessions include:

- Demonstrating the collection of representative ground water samples using flow-through cells to obtain stabilized field parameters, and collect samples representative of groundwater. Best practice techniques and lessons learned will also be demonstrated. Surface water and wastewater sampling techniques will also be discussed.
- Demonstrating the use of various gas monitoring instruments to evaluate compliance with gas migration through the subsurface (perimeter monitoring), as well as the surface emissions monitoring inspection methods. Best practices and lessons learned will be discussed.

Sessions and demonstrations will be led by the following industry experts:

- Andre Allen, Sniffer Robotics
- Kelly Cratsenburg, TRC
- Graham Crockford, TRC
- Joshua Kindy, Granger Waste Services
- Art Mohr, Sniffer Robotics
- PJ Nolan, WSP

- Jason Schmuecker, WSP
- Serenity Skillman, Granger Waste Services
- Chris Ulrich, EDL
- Kent Walters, MI EGLE
- Brian Yelen, TRC

Trainees should bring a high-vis vest and safety shoes and bring a clean pair of shoes for the training room.

**8:30 am – 9:00 am**

**Registration and Continental Breakfast**

**9:00 am – 10:15 am**

**Educational Sessions**

**10:15 am – 10:30 am**

**Networking Break**

**10:30 am – 11:30 am**

**Educational Sessions**

**11:30 am – 12:00 pm**

**Lunch**

**12:00 pm – 1:25 pm**

**Breakout Sessions**

**1:25 pm – 1:35 pm**

**Networking Break**

**1:35 pm – 3:00 pm**

**Breakout Sessions**

**3:00 pm – 3:15 pm**

**Networking Break**

**3:15 pm – 4:30 pm**

**Educational Sessions and Wrap-Up**

## CONFERENCE DAY

Tuesday, March 14, 2023

Kellogg Hotel & Conference Center, East Lansing

Building on the success of previous conferences, there will be an all-day exhibit area to provide manufacturers and suppliers with the unique opportunity to interact and explore some of the latest achievements in the solid waste and environmental industries.

**7:30 am – 8:30 am**

**Registration, Continental Breakfast and Visit with Exhibitors**

**8:30 am – 8:35 am**

**Welcome**

*Speaker: Adam Larky, PE, Sr. Director – Engineering and Project Management, NW Natural Renewables*

**8:35 am – 9:20 am**

**Building a Strong Safety Culture**

This session will discuss how to build and establish a strong and sustainable safety culture.

*Speakers: Jeff Schultz, Corporate Safety Officer, Ryan Incorporated Central and Jeff Gaulden, Corporate Safety Coordinator, Ryan Incorporated Central*

**9:20 am – 10:05 am**

**Snapshot and Outlook for the US Biogas Industry**

During 2021, the number of operational biogas facilities producing renewable natural gas increased by 47%. That same year, while dozens of projects ceased construction to become operational, still the number of projects under construction increased by 41%. So far at least the RNG sector, we have not just been seeing super-strong, double-digit growth, but an acceleration of growth. And that was before 2022 when the Inflation Reduction Act was passed and EPA announced they would finally make positive changes to the Renewable Fuel Standard to help RNG, electricity, and food waste-related biogas systems. Join us to learn where the US biogas industry is in 2023, where it's headed, and the new opportunities for the solid waste industry.

*Speaker: Patrick Serfass, Executive Director, American Biogas Council*

**10:05 am – 10:30 am**

**Networking Break / Visit with Exhibitors**

**10:30 am – 11:15 am**

**Effectiveness of Composite Liners to Contain PFAS in Municipal Solid Waste Landfills**

This presentation will discuss the effectiveness of Subtitle D municipal solid waste (MSW) landfills to contain PFAS present within the waste and in leachate. The sources and characteristics of PFAS will be discussed, and findings from laboratory and field studies regarding PFAS transport in modern lining systems will be presented. The findings indicate that modern Subtitle D MSW landfills with composite liners are highly effective in containing PFAS, and can serve as effective repositories for sequestration of PFAS.

*Speaker: Craig H. Benson, Wisconsin Distinguished Professor Emeritus, University of Wisconsin-Madison*

**11:15 am – 12:00 pm**

**EGLE Solid Waste Update**

With the enactment of the eight bills amending Michigan's solid waste statute there is a significant amount of activity preparing both agency staff, local governments and the regulated community for the upcoming changes. For some this will be the first time they have been regulated by MMD. For others, there are new requirements to learn and incorporate into their procedures. The counties and their local communities will also have changes to how they evaluate the management of materials in their localities and new opportunities for collaboration and growth.

*Speaker: Liz Browne, Director, Materials Management Division, MI Department of Environment, Great Lakes, and Energy (EGLE)*

**12:05 pm – 1:15 pm**

### **Luncheon and Networking**

**1:25 pm – 1:55 pm**

#### **Track A: A Case for Collecting Supplemental Groundwater Data to Demonstrate Compliance at Solid Waste Management Facilities**

There are many factors to consider when managing groundwater compliance programs at solid waste facilities. Expecting the unexpected can be very advantageous. Developing a proactive strategy for collecting supplemental groundwater data that may not be explicitly required in a monitoring program can provide substantial benefits that allow facilities to quickly evaluate and understand unexpected results or data trends and promptly respond, as necessary.

*Speaker: Kelly Cratsenburg, Project Manager, TRC*

#### **Track B: Part 115 Gas Regulations**

A description of the changes to landfill gas regulations in the Part 115 amendments.

*Speaker: Timothy Unsel, Landfill Gas Engineering Specialist, Michigan Department of Environment, Great Lakes and Energy (EGLE)*

**2:05 pm – 2:35 pm**

#### **Track A: PFAS: Tomorrow's Challenge Today**

In the PFAS Roadmap, USEPA has outlined a path and schedule for studying, developing, and implementing regulations for several industries identified to be discharging PFAS at substantial levels. Of the listed industries, landfills stand out: they do not produce or use PFAS. In Plan No. 15 USEPA recognizes that the solid waste industry is an essential utility that is a passive receiver of PFAS containing waste. The acknowledgement is unlikely to translate into favorable effluent discharge limits. Neither will research demonstrating that landfills sequester. State regulators, delegated facilities, and the USEPA will set discharge limits that will require landfill to treat their discharges. Plan No. 15 identifies two established and commercially available treatment technologies: adsorptive media filtration and reverse osmosis. Established, biological processes that are widely used to reduce conventional leachate constituents are of limited use for removing PFAS. Press releases are circulated among practitioners on an almost daily cycle promoting 'novel methods' for cleaning PFAS contaminated water. The objective of this presentation is to provide current information, a review of viable technologies, and provide direction for the industry.

*Speaker: Arie P. Kremen, PhD, Client Manager, Practice Lead Leachate Management, TetraTech*

#### **Track B: Opportunities to Add New Sources of Revenue through use of Real Time Data and Control Technology for Landfill Gas Collection to Increase Methane Capture, and to Reduce Emissions**

Landfills are the most concentrated source of man-made methane emissions, and are the third largest source methane emissions overall. Since 1996, landfill gas collection system design, operation, and management has been based on Federal Regulations. Gas collection has relied historically on manual measurements and valve

adjustments on a once per month frequency. According to the EPA, landfill gas system collection efficiency overall is under 60%.

LoCI Controls has commercialized real time data and control technology that has demonstrated according to third party, peer reviewed results, a 13%-24% increase in methane captured at four landfills which were using LoCI's real time data and control system to improve gas collection operations. Employing real time data and control is one of the fastest, lowest cost, largest impact opportunities to reduce methane emissions at a very large scale.

This presentation will also describe new opportunities for landfills to leverage voluntary, state, and federal carbon credit policies linked to emission reduction at landfills through the use of real time data and control technology.

*Speaker: Peter Quigley, CEO/Chairman, LoCI Controls, Inc.*

**2:35 pm – 2:55 pm**

### **Networking Break / Visit with Exhibitors**

**2:55 pm – 3:25 pm**

#### **Track A: A Case for Updating Conceptual Site Models to Understand Commingled Volatile Organic Compounds and Per-and Polyfluoroalkyl Substances**

Conceptual site models are a key tool for understanding and mitigating groundwater impacts at solid waste disposal facilities. They should be and often are updated as new information is gathered about a site or conditions change, including identification of new and/or emerging contaminants. Differences in the fate and transport properties between volatile organic compounds (VOCs) and per-and polyfluoroalkyl substances (PFAS) are well understood and should be thoroughly considered in conceptual site models at solid waste disposal facilities. This is a presentation of a case study highlighting the importance of up-to-date hydrogeologic conceptual site models in understanding PFAS impacts and how monitoring networks and treatment systems designed for VOC impacts should be reevaluated in the context of PFAS impacts.

*Speaker: Katy Lindstrom, Senior Environmental Engineer, Barr Engineering Co.*

#### **Track B: Emit Less. Earn More. Emissions Monitoring**

According to the US EPA, Michigan's forty-nine MSW landfills emitted 3.9 Million Metric Tons (MMT) of GHG CO<sub>2</sub>e in 2021. These emissions, vetted to the atmosphere, represent more than \$200 million in lost revenue to the industry. Capturing this revenue can make good business sense - representing an opportunity that should change how the industry detects leak sources using surface emissions monitoring. The speaker will present a drone-based method for emissions monitoring useful for study purposes helpful in assessing site emissions. The speaker will also present details of using the method for NSPS quarterly compliance as specified in the US EPA's recently approved alternative test method (OTM-51 / ALT-150).

*Speaker: David Barron, CTO, Sniffer Robotics*

**3:35 pm – 4:05 pm**

#### **Track A: PFAS Sequestration in Landfills**

Examination of the processes of PFAS fate and transport in a landfill environment. Talk will focus on PFAS Mass flux to landfills, sequestration and removal mechanisms.

*Speaker: Terry Johnson, Sr. Director, Groundwater and Technical Programs, WM*

#### **Track B: Reducing Maintenance Costs with Self Cleaning Pumps for LFG Well Dewatering**

Managing liquids in landfill gas wells is a major factor in managing a gas collection system. At many sites, pneumatic submersible pumps are used to remove the liquid and keep the perforations open to increase the gas flow and improve collection efficiency, both for energy value and control of LFG emissions and odors. The liquid in gas wells can be very difficult to pump and solids that build up inside the pump can clog the pump, causing it to stop working. Keeping the pumps running requires routine maintenance, and challenging wells can require pump pulling and cleaning as frequently as monthly or weekly. Recently, a new pump design with a unique self-cleaning action has proven to extend pump run time and reduce O&M cost. The new design incorporates a vortex generator which creates swirling action in the liquid that helps to clean the internal components and keep the pump running longer.

This presentation will:

- Examine the new technology
- Share some customer success stories
- Look at the economics of improved gas recovery efficiencies

*Speaker: Brad Peake, Vice President, QED Environmental Systems, Inc.*

**4:05 pm**

### **Conference Adjourns**

**4:05 pm – 5:30 pm**

### **Exhibitor Reception / Networking**

## **THANK YOU to the Conference Planning Committee:**

Adam Larky, PE (Chair), NW Natural Renewables  
Jennifer Bowyer, PE, Tetra Tech  
Richard Burns, NTH Consultants, Ltd.  
Graham Crockford, TRC Solutions  
Douglas M. Gatrell, PE, GHD  
Nicole Green, WM  
Debora Johnston, WM  
Milind Khire, The University of North Carolina, Charlotte  
Bryan Marks, Great Lakes Fusion  
Art Mohr, Sniffer Robotics  
Christina Pearse, Republic Services, Inc.  
Dawn Prell, WSP  
Bobby Reese, Republic Services  
Margie Ring, Michigan Department of Environment, Great Lakes, and Energy  
Ibraheem Shunnar, Mannik & Smith  
Serenity Skillman, Granger Waste Services  
Chris Ulrich, EDL



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