

30TH ANNUAL

SOLID WASTE TECHNICAL CONFERENCE 2020



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Southfield, MI 48076

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TRAINING DAY: Wednesday, March 11, 2020
CONFERENCE DAY: Thursday, March 12, 2020

Kellogg Hotel and Conference Center



SILVER SPONSERS:



All conference day and/or training day attendees will be eligible for Continuing Education Credits based on hours of instruction time. SWANA credits will be available.

To Register: Visit www.esd.org or call 248.353.0735

30TH ANNUAL

SOLID WASTE TECHNICAL CONFERENCE 2020



TRAINING DAY: Wednesday, March 11, 2020 | East Lansing Community Solar Park & Kellogg Hotel & Conference Center
CONFERENCE DAY: Thursday, March 12, 2020 | 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 30 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.

Interested in Sponsoring or Exhibiting? Sponsorship & exhibit opportunities are available. For information, visit www.esd.org or contact Leslie A. Smith, CMP @ lsmith@esd.org or 248-353-0735, ext. 152.



All conference day and/or training day attendees will be eligible for Continuing Education Credits based on hours of instruction time. SWANA credits will be available.

Accommodations: Discount overnight accommodations are available at the Kellogg Hotel & Conference center at the rate of \$125 (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 2003ENGSOE to receive the discounted rate. The group reservation rate is based upon availability.

Training Day Cost: (Onsite tour, presentations and dinner are included in training day pricing)

\$150 ESD/MWRA* Member

\$200 Non-Member

\$100 Government/MEGLE*

\$75 Dinner and presentation only

(does not include tour and is based on availability)

\$75 Student Rate* (applies to undergraduate students only)

\$275 Join ESD at 50% discount and attend training day

Conference Day Cost: (Full day conference, continental breakfast, lunch and reception are included in the event pricing)

\$190 ESD/MWRA* Member

\$230 Non-Member

\$100 Government/MEGLE*

\$75 Student Rate* (applies to undergraduate students only)

\$280 Join ESD at 50% discount and attend the conference

* Please call to register to receive the MWRA, Government/MEGLE and student rates.

To Register: Visit www.esd.org to register online or call 248-353-0735.

Cancellation Policy: All cancellations must be received by Friday, March 6, 2020 in order to receive a refund.

TRAINING DAY INFORMATION

Wednesday, March 11, 2020

Attendees will meet at the Kellogg Hotel & Conference Center and will be taken by bus to the facility for the tour. Upon completion of the tour attendees will be transported back to the Kellogg Hotel & Conference Center for presentations and dinner.

The day will begin with a tour of the East Lansing Community Solar Park, which was recently recognized at the 7th annual Michigan Energy Innovators Gala as its 2019 Project of the Year award. The solar park, which contains 1,000 leased 345-watt panels, is a collaborative effort led by Michigan Energy Options (MEO) in partnership with the Lansing Board of Water and Light, the City of East Lansing, and Pivot Energy. It resides upon the protective coil cover for the retired former Burcham Landfill that received municipal solid waste during the 1960s. These stakeholders worked with the Remediation and Redevelopment Division of the Michigan Department of Environmental Quality (now Environment, Great Lakes, and Energy) to reach approval of a concrete pedestal-based design (i.e., no waste was disturbed by the solar panel array) that is compatible with the landfill's protective soil cover, while providing due care for the environmental conditions at

Burcham Park. The solar park design includes stormwater runoff management berms and retention pond, new bee-friendly pollinator plants, native grasses, educational signage, and a sculpture by local artist Jim Cunningham. MEO projects that over the life of the project, the East Lansing Community Solar Park will produce more than 10.9 million kilowatt-hours of renewable energy. Scheduled to lead the tour are MEO President John Kinch, PhD, the East Lansing Department of Public Works, and Golder Associates Inc. Attendees are encouraged to dress appropriately, including expected wet and muddy ground conditions with possible snow cover.

11:45 am – 12:15 pm

Registration at Kellogg Conference Center for tour

12:30 pm

Bus departs for tour

1:00 pm – 3:30 pm

Tour of the East Lansing Community Solar Park

3:30 pm – 4:00 pm

Bus returns to the Kellogg Center

4:30 pm – 5:00 PM

Networking Reception with Cash Bar

5:00 pm – 6:00 pm

Dinner

6:00 pm – 6:45 pm

RE-Using Closed Landfills: Solar Energy Design Practices and Considerations

According to the United States Environmental Protection Agency approximately 225 solar energy

projects have been built on landfills nationwide including three projects in Michigan. Many more landfills of various sizes are available for solar development. Closed landfills can be well suited for solar development when compared to other locations since they typically have: minimal shade; neighbors receptive to solar development; compatible zoning; and readymade access to existing electrical grid infrastructure.

Transforming these closed landfills into renewable energy projects can create a “win-win” scenario by providing additional revenue for the landfill owner while reducing greenhouse gas emissions. This presentation will focus on the landfill solar design components including several best management practices.

Speaker: Drew Lent, Northeast Solar Services Lead, Tetra Tech

6:45 pm – 7:30 pm

Solar Options for Landfill Cover Systems

This presentation will outline the potential use of solar panels on landfill final cover systems. Solar panels have potential to be used on varying landfill cover systems including caps consisting of soil components only, caps closed with geosynthetic and soil components, or caps closed with full geosynthetic components. Understanding the issues regarding these options may lead to optimizing cover designs and reducing costs while also achieving the Owner's intent.

Speakers: Halle Doering, Project Civil Engineer, Golder Associates and Dave Regalbutto, CPG, Senior Hydrogeologist, Golder Associates

7:30 pm – 8:15 pm

**Growing Renewables in Michigan –
A Utility Viewpoint**

Knox Cameron will spend the time walking through the growth of renewables in the State of Michigan. He will look at the challenges and opportunities ahead as well as provide insights from the utility perspective and their role in supporting renewables.

**Speaker: Knox W. Cameron,
Manager-Renewable Sales and
Marketing, DTE**

8:15 pm

Adjournment

CONFERENCE INFORMATION

Thursday, March 12, 2020

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, Senior
Project Manager, EDL**

8:35 am – 9:20 am

**Statewide Leachate Impacts on
PFAS Waste Water Treatment Plant
Influent**

This session will summarize the

results of the 2019 Michigan Waste & Recycling Industries (MWRA) statewide research project to assess the impact of leachate discharged from 35 active, licensed solid waste landfills on PFOA and PFOS concentrations detected in waste water treatment plant (WWTP) influent. The presentation will include a description of a unique agreement between MWRA members, coordination with EGLE, international research, sample collection and analysis, as well as an evaluation of PFOA and PFOS concentrations and mass at participating landfills and WWTPs.

9:20 am – 10:05 am

**Field Data and Modeling of Heat
Generation in Select Municipal Solid
Waste Landfills**

Municipal solid waste (MSW) in landfills undergoes primarily biological reactions and these reactions typically produce heat.

A relatively small fraction of MSW landfills located in the U.S. and abroad have exhibited temperatures elevated above normal levels. Understanding the heat generation and heat transfer in landfills may yield insight into the mechanisms causing heat generation and factors in heat accumulation. In this presentation, we examine the temperature regimes of various landfills and evaluate heat generation and transfer in two MSW landfills using the 3-D model TETRAD. TETRAD is a finite-difference numerical simulator of multi-phase,

multi-component flow of fluids and heat in porous and fractured media and is commonly used for geothermal energy reservoir modeling.

**Speaker: Terry R. Johnson, Senior
Director, Groundwater and
Technical Programs, Waste
Management, Inc.**

10:05 am – 10:30 am

**Networking Break and Visit with
Exhibitors**

10:30 am – 11:15 am

Safety

EDL's number one priority is safety and creating a "Zero Harm" work environment. This presentation will share the behavioral training and safety process tools that EDL uses to promote a mature safety culture, and the challenges of achieving Zero Harm.

**Speaker: Jim Grant, PE, North
America CEO, EDL**

11:20 am – 12:05 pm

**Recent Developments with
Geosynthetics in Waste
Containment Facilities**

This presentation focuses on the quality issues related to geosynthetics used in the waste containment facilities as they relate to permanent and critical applications. The presentation emphasizes all phases of the project from manufacturing to installation. It is widely recognized good facility performance requires a quality system approach involving the following:

- Good design by a Professional Engineer
- Quality materials

- Accredited testing
- Best Available Installation
- Quality Assurance
- Performance test prior to commissioning facility
- Careful operations and maintenance

It is our goal to improve the current state of the practice of waste containment facilities and better protect human health and the environment for future generations.

Speaker: George Robert Koerner, Director, Geosynthetic Institute (GSI)

12:05 pm – 1:35 pm

Luncheon with Presentation

PFAS Update

Michigan continues to lead the nation with its data-driven, science-based approach to rapidly identify and reduce exposures to per- and polyfluoroalkyl substances (PFAS) contamination. This presentation will highlight the recent efforts and accomplishments of the Michigan PFAS Action Response Team (MPART) to better understand the occurrence of PFAS throughout the ecosystem, protect public health, and prevent future contamination.

Speaker: Steve Sliver, Executive Director, Michigan PFAS Action Response Team (MPART), Michigan Department of Environment, Great Lakes, and Energy

1:40 pm – 2:10 pm

TRACK A

US EPA's Final Push for Regulatory Reform: How Will New Federal Coal

Combustion Residuals (CCR) Rules Impact Implementation of a Michigan State CCR Permit

US EPA first published federal rules for Coal Combustion Residuals (CCR) on April 17, 2015. Since the Initial publication of the rules, the federal rule has been shaped with an eye towards amendments by a Settlement Agreement in June 2016, the Water Infrastructure Improvements for the Nation (WIIN) Act in December 2016 followed up with initial rulemaking announced in November 2017 that culminated in a final court decision in August 2018 that would redefine standards and compliance timelines associated with unlined CCR surface impoundments. In the White House Fall 2019 Regulatory Agenda, US EPA indicated that four draft rules would be proposed during this period, and one of those rulemaking efforts (Federal CCR Permit Program) would be finalized. The anticipated final rules that will be published will impact standards and compliance with the federal rule but also influence the adoption of an authorized Michigan State CCR Permit Program and applying state-specific flexibilities. This presentation will develop specific changes proposed and provide state-specific context around implementation.

Speaker: Harold D. Register, Jr., Principal Engineer, Consumers Energy

TRACK B

Loci Controls – Byron Center Project

EDL Energy installed the Loci Control system at Byron Center in June of 2019. This was a trial run to

determine if automation of the gas field would yield positive increases in gas flow. This presentation will review the results of the trial and go over some details of EDL's experience of automation of the gas field at Byron Center.

Speaker: Kyle Tucker, North America Landfill Gas Manager, EDL Energy

2:15 pm – 2:45 pm

TRACK A

Maximizing the Value of Information Management for the Implementation of Groundwater Data Management Programs

TRC is working with solid waste clients, supporting the development of groundwater monitoring, investigation, and potential corrective action strategies for their regulated units. Groundwater quality data for these units has been collected for decades under state permitting programs, such as Part 115, often using various data management systems. Efficient and reliable data/information management is a critical component of the portfolio given the large volume of data historically collected and long-term data collection associated with post closure. TRC developed a consistent information management system that could accommodate programs with varying levels of database maturity and utilized a common data management platform. The selected data management software was EQuls™ based on its ability to cross platform with other tools and leverage knowledge assets to provide a cost-effective, and highly reliable compliance

assurance program. Clients have recognized added value through the data evaluation tools and dashboards that streamline analysis and reporting while providing documentation to support their forward-thinking compliance strategies. The ability to quickly access and evaluate data is essential for timely decision making, which is important to solid waste clients and their consultants. This presentation will deliver example use cases in establishing proactive tools and systems to increase responsiveness and effectiveness for dealing with data analysis and regulatory information requests that can result in short and long-term cost savings.

Speaker: Darby Litz, Senior Engineer/Hydrogeologist, TRC

TRACK B

E-Coli in Stormwater

Attempting to regulate e. coli. represents a unique set of challenges including determination of watershed impairment, attempting to determine source, corrective measures, and establishment of protocol to lift the “impaired” designation. In the waste industry it seems the automatic presumption is that the waste materials and handling equipment will generate stormwater runoff containing elevated levels of e. coli. Preliminary data suggests otherwise.

Speaker: Tim Krause, Director of Engineering, Granger

2:45 pm – 3:15 pm

Networking Break and Visit with Exhibitors

3:15 pm – 3:45 pm

TRACK A

Coal Combustion Residual Rule - Overview of Statistical Analysis of Groundwater Data

The Coal Combustion Residual (CCR) federal rule released by the Environmental Protection Agency in 2015 requires Coal Ash facilities not previously regulated to perform groundwater statistics and determine whether a facility has impacted surrounding groundwater. The statistical analyses are analogous to the groundwater statistics that have been performed at Subtitle D municipal waste facilities for over 20 years. One of the most important lessons learned is “one size does not fit all” when it comes to groundwater statistics. Each regulated unit has its own unique characteristics based on hydrogeology and geochemistry, for instance, requiring statistical analyses to also be unique to an individual site. Following the USEPA Guidance (2009), the statistical analyses may include interwell, intrawell or a combination of both methods depending on how the constituents behave particularly upgradient of the facility. The information presented during this session will be focused on discussing the differences in statistical analysis requirements for Appendix III and Appendix IV parameters, how to determine the most appropriate statistical method for a given site with examples of the different

approaches, as well as how to update background data for interwell and intrawell analyses.

Speaker: Kristine Rayner, Owner, Groundwater Stats Consulting LLC

TRACK B

Case Study of How Alternative Covers Can Help Solve Operational Issues

What are your options when you have a problem with working face odors due to cover stripping? Are there any additional tools available for facility operators and managers once they’ve implemented the standard measures to mitigate odor, such as installing additional gas collection wells or a misting system? Learn how a site in New York dealt with this very issue, assisted in large part by using a new type of Alternative Daily Cover (ADC), called the Enviro Cover System. This ADC consists of an odor absorbing, non-reusable proprietary polyolefin film, placed at the working face at the end of the operating day. Since this tear resistant film is placed directly over waste and does not require removal prior to waste placement, it provides continuous coverage in the control of odors and emissions until landfill operations begin the following morning, eliminating the need to strip cover soils each morning. During this discussion you will hear about the results of a pilot test using the Enviro Cover System that was initiated in December of 2018 at the Site. The pilot test, which was originally approved for a 30-day trial period, was extended to 6 months to allow proper vetting by state regulators and landfill

management, and ultimately approved for use as an approved ADC. Benefits noted during the pilot test included improvement in odor control and potential emissions, ease of deployment, minimization of water infiltration, and litter control.

Speakers: J.D. Mohr, Business Development, Environmental Products, Inc. and Michael Casullo, Engineer, GHD

3:50 pm – 4:20 pm

TRACK A

Completion of Alternative Source Demonstrations and Their Effect on Detection Monitoring Systems of Waste Disposal Facilities - The Good, The Bad and ...

TRC is working nationally in a program management capacity with solid waste and Coal Combustion Residual (CCR) clients, supporting the development of groundwater monitoring, investigation, and potential corrective action strategies for their solid waste and CCR landfills and CCR impoundments.

Groundwater monitoring systems and detection monitoring programs for these sites have been established and monitoring at several of these sites has been ongoing for decades. Subsequent to waste placement, conditions at many of these sites have significantly changed, and these changes in groundwater chemistry may or may not be the result of the regulated unit. This presentation will focus on conditions that present themselves during implementation of detection groundwater monitoring that might result in the need to perform alternate source demonstrations (ASDs), re-assessment and

modification of the existing groundwater monitoring system, or perhaps result in the updating or revisiting of conceptual site models. Completion of data evaluations/ASDs also might result in the need to decommission monitoring wells, install replacement wells, incorporate additional new wells, or enter into assessment monitoring/corrective action in the event that the ASD is not successful.

Speaker: Sarah Holmstrom, Senior Hydrogeologist, TRC

TRACK B

Recirculation of Reduced Water Leachate - US Experience

Landfills are designed to handle solid wastes and liquids that enter the landfill, as precipitation, biological degradation, or with the trash, can be a challenging and expensive problem. A landfill disposing of leachate via sewer is not in control of their leachate destiny, with both the ability to dispose of leachate and the cost for disposal entirely out of the landfill's control. Options for on-site treatment that can either provide clean water for reuse or discharge (reverse osmosis) or evaporation to water vapor are readily available. But both options result in a concentrated residual leachate stream. Many landfills are reluctant to return these materials to the landfill due to concerns with operations and the potential for the returned material to increase the strength of the leachate and cause future issues. This presentation will present data from two landfills that have been recirculating the residuals from leachate treatment RO units for many years and one landfill that has never recirculat-

ed any liquids. Data demonstrating that with proper recirculation the impacts on the concentration of contaminants in the leachate do not show a significant change in concentrations will be presented. Data on a variety of compounds including organic, inorganic, and emerging chemicals will be presented showing minimal variation in leachate concentrations over time.

Speaker: Patrick Stanford, General Manager, Rochem Americas, Inc.

4:25 pm – 4:55 pm

TRACK A

Geochemical Modeling for Remedy Selection at CCR and Remediation Sites

Enhancements to monitored natural attenuation (MNA) should be considered early during feasibility studies at active and closed Coal Combustion Residual (CCR) sites. Using advanced 3-dimensional reactive transport models, potential engineering enhancements to MNA can be efficiently and reliably tested and tailored to site-specific conditions. Examples will be presented of an assessment of a series of proposed engineering approaches to enhanced MNA (e.g., source removal, cap and closure, and in-situ geochemical conditioning) using 3-dimensional reactive transport modeling at a CCR site. Multiple scenarios are provided and the factors that influence their potential for long-term success are discussed. The results of such an evaluation allow all stakeholders to be better informed during the selection of appropriate corrective measures.

Speaker: PJ Nolan, Ph.D., Project Geochemist, Golder Associates

TRACK B:

PFAS Removal From Landfill

Leachate (Case Study)

There are many man-made chemicals that can be identified as emerging contaminants including perfluoroalkyl and polyfluoroalkyl substances (PFAS). Most of products containing man-made chemicals are disposed at landfills and/or discharged through sewer systems to wastewater treatment plants (WWTPs). Source level control via structural and non-structural methods are required to mitigate the environmental damage caused by current and future emerging contaminants. Systematic prioritization strategies are needed in developing the source control techniques for emerging contaminants such as PFAS. This presentation will discuss the prioritization, development of treatment strategies and vision with respect to current and future emerging contaminants, as well as lessons learned during the implementation of PFAS removal systems.

Speaker: Mala Hettiarachchi, PhD, PE, Project Engineer, Environmental Resources Group

4:55 pm

Conference Adjourns

5:00 pm – 6:15 pm

Exhibitor Reception and Networking

Thank you to the Solid Waste Conference Planning Committee:

Adam Larky, PE (Chair), EDL Energy

Richard Burns, NTH Consultants, Ltd.

Dr. Bora Cetin, Michigan State University

Graham Crockford, TRC

Douglas M. Gatrell, PE, GHD

Nicole Green, Republic Services, Inc.

Debora Johnston, Waste Management

Milind Khire, The University of North Carolina, Charlotte

Art Mohr, Environmental Specialties International

Christina Pearse, Republic Services, Inc.

Dawn Prell, Golder Associates Inc.

Margie Ring, Michigan Department of Environment, Great Lakes, and Energy

Ibraheem Shunnar, Mannik & Smith

Patrick Triscari, EDL Energy

Chris Uhlrich, Tetra Tech



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