President’s Corner
By Cathy Hall

It’s A New Year, Pledge to Make it a Safe Year

If you are like me, I make resolutions in the New Year in an attempt to make me a better person. Whether it is resolving to fold and put my laundry away, the actual day it comes out of the dryer, be better about saving for my retirement, or simply read more books. Studies have shown only 25 percent of people actually stay committed to their resolutions after just 30 days, and only 8 percent of us keep our New Year’s resolutions for the entire year.

However, there is one resolution we all need to make and keep, and that is to resolve to make safety a top priority. I encourage everyone to take the SWANA Safety Pledge. SWANA has committed to move the waste...
industry off of the list of 10 most dangerous jobs and reduce accidents and injuries. Whether you work for a waste hauler, a landfill operation or consultant we can all play a part in being safe. This is a critical resolution we all need to make and keep by practicing safe habits, recognizing hazardous conditions and making an effort to stay trained up in the latest industry safety practices.

While my laundry resolution has met a wrinkly demise, I have committed to keeping my safety resolution. I have taken the SWANA safety pledge and committed to making sure my coworkers and myself stay safe and arrive home every evening in the same condition they arrived to work.

Take the Safety Pledge to show your commitment to protecting yourself and others from harm every day. It only takes a second and who knows, could save a life someday.

https://swana.org/Safety/HaulerOutreach.aspx?_zs=9VABV1&_zl=iW3S6#safetyPledge

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**News and Updates**

**2020 Colorado SWANA Road-E-O**

We are in the planning stages of the 2020 Colorado SWANA Road-E-O. We are looking at June to host this fun and exciting event for the whole family. We will be looking for contestants and volunteers. If anyone is interested in joining the planning committee email Ken Arguello ken.arguello@denvergov.org. **We are always looking for help!**

**Zero Waste Training**

Zero Waste Training will take place April 23rd and 24th at the Boulder County Recycling Center Education rooms. Breakfast and lunch will be provided. The cost for the two-day training will be $425. On-line testing will be available. The cost for the exam is $200. Scholarships are available. You can contact Darla Arians Darla Arians of Boulder County at Phone 720-564-2223, darians@bouldercounty.org.

**Updates from a Colorado SWANA Scholarship Recipient**

CO SWANA provided a stipend to Emily Graffam and her team partner, Megan Percy, to help them with travel expenses, etc. to WASTECON 2019. Below is the write up from Emily.

This summer, I had the opportunity to participate in the Student Design Competition for SWANA at Wastecon 2019 in Phoenix, Arizona. My team explored current determinations of recycling rates, and provided a design that looked at the importance of standardization, and thinking of recycling as more than a weight-based activity. Considering the
environmental benefit in the determinations of recycling rates could potentially change the impact of recycling in the future. This experience allowed me to advance my career in the solid waste industry as an Environmental Specialist at Waste Connections. I am very thankful for the opportunity to learn and apply this experience to my career!

Forwarded message from CDPHE on Green House Gas Reporting
To improve statewide greenhouse gas (GHG) data, the Colorado Department of Public Health and Environment, Air Pollution Control Division (APCD) is proposing a rule that would require GHG reporting from certain sources not currently covered under federal requirements. This is in response to Senate Bill 19-096. If approved, we anticipate that this rule will require all active landfills in the state to report GHGs on an annual basis (every March). Many landfills are already subject to the federal requirement and we anticipate that state requirements would apply to about 36 additional operations across the state.

On February 20, 2020, APCD will be submitting a request to the Air Quality Control Commission (AQCC) for a rulemaking hearing to be held in May, 2020. The AQCC will have its own formal rulemaking process and SWANA and/or its members will have the opportunity to provide public comments or request party status to be able to provide testimony. CDPHE expects to have draft rule language available to the public in the next couple of weeks.

Speaker Summary Articles
By Dana D’Souza

Starting with the last newsletter, we began including short writeups of presentations from speakers who presented at the 2019 Colorado SWANA Annual Conference. If you missed the chance to see any of these presentations, here’s your chance to hear what they had to say. If you would like to find out more, presentations have been uploaded to the website https://coloradoswana.org/resources/past-presentations/

Sustainable Scale House Design
By Marcel Kozlowski, P.E. – Sanborn, Head & Associates, Inc.

The scale house is arguably the heart of any landfill operation. Accurate tracking of volumes, tonnages, truck counts, and revenue is critical for landfill managers to schedule daily operations, purchase equipment, and construct necessary landfill infrastructure. Proper siting, design and construction of a landfill’s scale house, coupled with technical innovations, can significantly improve the efficiency of any operation in the present while allowing for expansion to meet the demands of the future. Effective communication between contractors, regulators, and solid waste owner/operators is a key component of designing, permitting, and constructing a scale house for long-term operation. This presentation includes example designs, lessons learned, and recommendations for efficient and economical scale house designs.
Over a generation, the airline industry evolved towards a hub and spoke model that culminated in the construction of large airports “far” from population centers (DEN, Dubai, Abu Dhabi) and introduction of the largest aircraft in the world, the Airbus A380. The A380 can take up to 850 passengers over 9000 miles.

During the same period, the recycling industry constructed a reverse supply chain via hub and spoke model. Domestically, material is transported across vast distances for sorting in large, multimillion-dollar sorting facilities and/or shipped across the ocean to countries where labor costs were low and the need for raw material was great (China, India, etc.)

In 2019, Airbus cancelled production of its flagship product while China’s National Sword quality policy put the recycling industry into a tailspin.

What can we learn? Comparing the A380 to other aircraft, we can see that despite it being a newer, more high-tech platform it has the highest price, the highest parked-cost and the longest turnaround time. Direct long-haul transpacific flights from secondary airports are cheaper, more convenient and shorter than connecting flights to ride in the double decker “Queen of the Skies.” With flagging demand, for flights from customers and resulting cancellations of aircraft orders from the carriers, several lessons emerge: Customer convenience matters more than provider convenience. Consumers have a choice.

There is such a thing as too big. The A380’s size added to its operating costs as well as the costs of the airports that hosted it, increasing spacing, requiring new, special gates and clogging up the airport with more people. These costs took their toll, adding to the already high costs of underutilization with the plane’s $137,000/day parked-cost. Even when airlines could sell enough tickets, weather and late flights made getting everyone there to fill the plane difficult. Big systems are hard to deal with, require accommodation for their size and increase risk to the overall system. The increasing costs, cutting the bottom lines of the carriers and causing increased costs and delays for consumers were too much to bear.

For recycling, these lessons could not be clearer:
- Increasing customer convenience through implementation of single stream programs or readily available drop-off locations, ensures that demand for recycling services will increase.
- Bigger is not always better. Smaller recycling centers are easier to site, reduce logistics costs, require less material to fill, and have lower break-even points.
- Like the airline industry, overall system costs matter. Shorter spokes and earlier transition to high density freight (21 tons/load) lower overall costs, critical to industries with variable and razor-thin margins (like airlines and recycling). In addition to lowering costs, less handling means minimizing residue and eliminating it early from the system.
- Last of all, local traceability of contamination means that it can be addressed quickly.

As the recycling industry evolves to meet the challenges of a shrinking world, there are many places to look for improvements in services and lower costs. Sometimes, smaller is better!
Smart Trade-Offs to Add Composting Collections Affordably
By Dana D’Souza, Skumatz Economic Research Associates (SERA)

Adding a curbside composting collection can be a great way to improve those diversion numbers. After all, organics can easily be quarter of the waste stream (or more), and let’s face it, we’re not going to get the majority of residents to take up backyard composting. Recognizing that the bulk of the cost of collection is getting the truck to the curb, how can you add an additional collection stream without breaking the bank? Try swapping out one day of collections for another.

How’s that work? Think of it like this. If you collect residents’ trash one day a week and recycling one day a week, trucks are making two trips per week. If you switch one of those weekly trips to every other week then you can fill that slot with an organics collection stop. It could look like trash collection once per week with recycling and organics collection on alternating weeks. Or trash and recycling alternating weeks and organics weekly. If you consider that many communities are having to pay for recycling, organics tipping fees may be much cheaper. There’s certainly more involved when starting an organics program, but this can be an economically way to add something new using what you already have.

10 Steps to Better Regulatory Submittals

A better regulatory submittal is a submittal that is well-organized, well-written, and meets the needs of the project, the client, the consultant, and the regulatory agency. This, in turn, results in a shorter regulatory review, less back-and-forth during the review process, and faster approvals. Ultimately, this saves the client time, money, and stress. For example, getting a quicker review and approval of a CQA Report for a new landfill cell can get that new cell accepting waste (and tipping fees) sooner, and reduces the stress of running out of air space in the existing cell during the review process. If the liner system is compacted clay, a quicker review and approval also can reduce the risk of desiccation of the clay liner.

How does one get a better regulatory submittal? Here are few highlights:

• Know the relevant regulations and guidance, your client, the site, and your regulatory representative(s).
• Understand the difference between being a technical person who wants to achieve a perfect submittal and the necessities of preparing a submittal that is sufficient to the task.
• Revise, edit, re-write, and review before the final submittal.
Leachate Level Monitoring Systems
By Charles Reich, Reich Landfill Equipment

In arid climates where leachate accumulation in a landfill sump is little or nothing, the requirement for leachate pumping may not exist. However, knowing what is in the sump may be of value. Inexpensive leachate level monitoring systems can be utilized to provide sites with valuable level information. These systems range from dedicated level sensors in the sumps with portable reading devices, powered by vehicle power plugs, for random readings to dedicated solar powered level readout systems providing continuous level readouts. Such level readouts may provide sites with up-to-date data that regulators often request.

Top 5 Compliance Tips for Small Landfills
By Travis Evans & Melissa Hinman, Trihydro

With limited resources, owners and operators of small municipal solid waste landfills (MSWLFs) often face challenges balancing operational costs with compliance needs. The numerous compliance requirements can be difficult to track and monitor, and it can be easy for day-to-day tasks to fall through the cracks. To avoid regulatory penalties and enhance operational excellence, it’s beneficial to evaluate compliance with your permit regularly during the landfill operational phase. In a recent article, we outlined the top five compliance areas small MSWLF operators should check-up on.

1. Stormwater Management: Minimize leachate generation by preventing surface water from entering the waste mass (to the extent practicable).
2. Working Face: Keep working face as small as safely possible to limit the amount of blowing litter and the amount of daily cover that must be placed.
3. Daily Cover: Apply six inches of soil or approved alternative daily cover (ADC) daily. This minimizes erosion, controls odors, prevents scavenging, reduces fire risk, improves appearance, and minimizes contamination runoff. Waste will still be visible when six inches of daily cover is applied. If you don’t see waste after applying daily cover, you are likely applying too much daily cover.
4. Erosion: Inspect your cover for erosion and implement necessary maintenance activities.
5. Litter: Assess your current methods for controlling litter. You can manage litter in several ways, including enforcing tarped loads, waste handling practices, portable litter screens, litter fencing, select tipping areas, daily cover, and by restricting operating hours in periods of high winds.

Case Study on the Use of Multi-Linear Drainage Geocomposite for Primary Leachate Collection – Mesa County, CO
By Andrew Jung, Western GeoSystems

A case study was presented on the use of a Multi-Linear Drainage Geocomposite for a primary leachate collection system at the Mesa County Landfill in Grand Junction, CO. In the design and construction of landfills, leachate collection systems are a critical design component in order to minimize the hydraulic head on the primary liner systems. This is helps to minimize the leakage through the liner system.
Geosynthetics have a proven track record being used for leachate collection in order to ensure proper functioning of the landfill once placed in service. They can also offer reduced cost, quicker construction, improved safety and a reduction in greenhouse gas emissions during construction.

While in use for over 30 years in Europe, multi-linear geocomposites are relatively new in the United States. Instead of a geonet core between two geotextiles, multi-linear geocomposites use perforated pipes as the drainage conduit. This offers advantages with respect to creep and intrusion which can reduce the drainage capacity of traditional geocomposites over time and under load. Long term drainage capacity for a variety of geocomposites was shared at the conference using research and field studies found in GRI GC8, GSI White Paper #4 and ASTM D7931. Installation photos and videos from the 2018 new cell construction were shared with the audience.

**Down Draft Enhanced Evaporation for leachate, wastewater and stormwater volume reduction with pollution plume control**

By Robert L. Ballantyne Jr., Resource West (RWI)

Three years of research on improving evaporation methodology for leachate and stormwater volume reduction [were presented] showing operators how using evaporation onsite reduces the volume handled. This adds up to significant OPEX savings, reduced trucking, treatment volumes, and mitigates operator’s liability exposure by keeping all liquid onsite for treatment. The presentation included the myriad of problems plaguing old obsolete evaporation solutions and presentation of science data clearly indicating that dry aerosol plume drift was a long-term liability operator may be creating. Higher contamination levels in the leachate increase the risk of an aerosol plume in the prevailing wind corridor. Research data from further study into control methods defines what operators evaporating their leachate would need to do to prevent long term environmental liability. Energy studies were completed to cost budget "per gallon" of leachate and stormwater reduced costs. Data showed that new techniques garnered an 88 percent reduction in energy per pound of leachate/ stormwater reduced was possible.

A review of controls and methods was considered to respond to environmental contamination. A best available control technology practices was presented to show how dry aerosol plume can be controlled in the outdoor environment for effective leachate / site stormwater reduction without the environmental risk of a pollution plume on the prevailing wind corridor from the site. Use of metered odor control with the leachate evaporation system was presented as an additional environmental mitigation while reducing produced water volumes safely without more equipment.

RWI created an automated Enhanced Evaporation machine, and Mr. Ballantyne offered his number to everyone [at the presentation], as his team is available to help your operation even if you are not able to make a capital purchase. “RWI does raw science, and we will use it to help guide anyone trying to keep the environment safe, you don’t have to be purchasing our equipment to call us about your situation!” said Mr. Ballantyne
Colorado SWANA Scholarship and Awards Information

By John Briest & Walt Tokunaga

The Colorado Chapter of the Solid Waste Association of North America (CO-SWANA) strives to enhance academic and professional development within solid waste management disciplines. Qualified individuals are invited to apply to the Chapter’s scholarships and awards program. We have awarded numerous awards for a diverse range of objectives over the past several years. We are working to encourage additional high-quality applications that we can review and put in front of our Board for approval.

Who’s eligible? Grants and scholarships may be awarded to SWANA members, prospective members, and college/university students who meet the minimum qualifications and successfully demonstrate commitment to helping raise standards of excellence for the waste management field.

What is available? Each year, CO-SWANA is prepared to award grants for a variety of types of educational expenses, as well as, scholarships for continuing education or academic expenses.

What’s the criteria? The Board of the CO-SWANA Chapter will review the applications and will prioritize, evaluate and rank the request on the following criteria:

• The content and timeliness of the training session or educational program.
• The expectation of the training’s benefits as it relates to academic or professional growth for the individual and/or the applicant’s employer.
• Willingness to provide a report, newsletter article, or presentation at the annual CO-SWANA conference, if appropriate.
• For scholarships awards, applicants who do not belong to SWANA and who do not already have a contact / sponsor who belongs to SWANA may be assigned a “sponsor” by the Board who is a member of the organization.
• If not already a member, level of interest / commitment to join SWANA.

To be considered for a grant or scholarship please fill out the application form along with a letter (no longer than one page) that describes how the applicant will benefit from the educational and/or training opportunity for which a grant or scholarship would be used. Applications should be submitted at least 30 days prior to the scheduled event or academic period. More information is located on our webpage: https://coloradoswana.org/programs/scholarships-awards/

This email news update is a service provided to members of the Colorado Rocky Mountain Chapter of SWANA. If you would like to share information with chapter members in future updates, please email your information to Dana D’Souza at dsouza@serainc.com.

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