Talking... RASH

The Newsletter of the SWANA Florida Sunshine Chapter

Fall/Winter 2014



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Letter from the President

December 2014

AND AWAY WE GO!

One year is just about over and the next is already upon us. The Roman poet Vergil wrote "Tempus Fugit" – Time Flees, which gave

birth to "Time Flies". I would sure would like to know how he managed his calendar.

Two big events, one great chapter.

First, we have Waves of Change: our winter conference.

February 8-10, 2015, in Clearwater Beach. We are expanding to two days and broadening our reach to other states. We have great general and breakout sessions. We already have commitments from Barry Shanoff, Attorney at Law and SWANA General Counsel; Jerry Powell, Executive Director, Resource Recycling; Mary Milne, Vice President of Guest Experience, Amalie Arena/Tampa Bay Lightning; and Eric Nelson, Vice President, Strategic Alliances, Interface Americas.

Second, Tammy Hayes and her band of volunteers are off and running to make WASTECON 2015 an event to remember and once again showcase our chapter's

> leadership. Mark your calendar now for August 25-27, 2015, at the Gaylord Palms in Orlando.

I look forward to seeing everyone at our winter meeting. Registration is open so book your room

while they are available.

A sincerely Happy and Healthy Holiday Season to you and your families. May your New Year be filled with health, happiness and success!

Mitch Kessler President, SWANA FL

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Chapter Officers and Directors



Rule of Transmissivities at Material Interfaces in Landfill Leachate Collection Systems

Written by Ali Khatami, Ph.D., P.E., SCS Engineers and Raymond Cathrall, SCS Engineers

Leachate collection systems (LCS) at the bottom of landfills generally include a drainage layer receiving leachate percolating down through waste layers and conveying the liquid laterally to a leachate collection pipe. The leachate collection pipe, in turn, conveys the leachate to a leachate collection sump. The leachate in the sump is normally removed through a gravity line penetrating through the lining system or through a submersible or primer pump.

The drainage layer may consist of a porous medium such as a layer of gravel, a granular medium such as a sand layer, or a synthetic layer such as a geocomposite. In all cases, the designer develops plans and details how these various components come together prior to construction of the leachate collection system. Hydraulic characteristics of the materials used in the LCS control flow of leachate through the LCS. For soil materials, the medium may be too small to consider the material as a medium, but rather as an interface. This article uses the word "interface" with the aforementioned meaning of by the designer. The general rule for flow of liquids through the leachate collection system is that each liquidreceiving component of the leachate collection system must possess higher



FIGURE 1. LEACHATE COLLECTION SYSTEM WITH A POTENTIAL FLOW BOTTLENECK

the medium versus interface. The interface between various components of the leachate collection system plays an important role for the proper flow of leachate to the LCS pipe. The designer should consider a very important general rule when designing interfaces of various components of



FIGURE 2. LEACHATE COLLECTION SYSTEM WITH NO FLOW BOTTLENECK

hydraulic characteristics of one soil medium against another soil medium is important; and for the case of geosynthetics, the dimensions of the leachate collection system. This general rule (sometimes referred to as the Rule of Transmissivities) should apply and should be verified transmissivity (or at least equal transmissivity) than the prior liquiddelivering medium. If this rule is not followed, a flow bottleneck will be created between a delivering medium with a higher transmissivity and the receiving medium with a lower transmissivity, and the flow bottleneck can potentially cause backup of liquids in the delivering medium. An example of a case that does not follow the above general rule is described below and illustratively shown in Figure 1.

Case 1: The entire thickness of the protective cover layer is uniform sand with hydraulic conductivity equal or greater that the overlying waste. The drainage geocomposite is extended through the LCS corridor (where the LCS pipe and gravel are located), and the LCS pipe is encased in gravel and wrapped in geotextile located directly above the geocomposite. The sequence of media interfaces involved in the flow of leachate from waste to the pipe for this case is: 1) from waste to the protective cover layer; 2) from the protective cover

layer to the upper layer of geotextile in the geocomposite drainage layer; 3) from the upper layer of geotextile in the geocomposite drainage layer to the geonet component of the geocomposite drainage layer; 4) from the geonet component of the geocomposite drainage layer to the upper layer of the geotextile in the geocomposite drainage layer (directly below gravel); 5) from the upper layer of the geotextile in the geocomposite drainage layer to the geotextile wrap of the LCS pipe; 6) from the geotextile wrap of the LCS pipe to the gravel around the LCS pipe; and 7) from the gravel around the LCS pipe to the LCS pipe. A careful review of these seven interfaces reveals that leachate is flowing from a higher transmissive medium to a lower transmissive medium at interface 4. which means liquid may backup in the geocomposite drainage layer because a flow bottleneck exists in the path of

the leachate from the geocomposite drainage layer to the gravel around the pipe.

An example of a case that follows the above general rule is described below and illustratively shown in Figure 2.

Case 2: The entire thickness of the protective cover layer is uniform sand with hydraulic conductivity equal or greater that the overlying waste. The drainage geocomposite is not extended below the LCS pipe, instead the gravel is directly placed over a layer of geonet overlying a geotextile cushion. The geotextile covering the gravel does not wrap around gravel, but is sewn to the upper geotextile of the geocomposite drainage layer on either side of the LCS pipe. The sequence of media interfaces involved in the flow of leachate to the pipe for this case is: 1) from waste to the protective cover layer; 2) from the protective cover sand layer to the upper layer

of geotextile in the geocomposite drainage layer; 3) from the upper layer of geotextile in the geocomposite layer to the geonet component of the geocomposite drainage layer; 4) from the geonet component of the geocomposite drainage layer to the geonet below the gravel around the LCS pipe; 5) from the geonet below the gravel around the LCS pipe to the gravel around the LCS pipe; and 6) from the gravel around the LCS pipe to the LCS pipe. A careful review of these six interfaces reveals that leachate is constantly flowing from one medium to another with higher transmissivity, which means flow bottleneck is unlikely.

There is no one-single design that would meet the above general rule, so it is recommended that check the general rule when the design of the leachate collection system is underway.

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Talking Trash 5



The Future of Old Dump Redevelopment

Written by Tobin McKnight, PE, Project Engineer, Jones Edmunds & Associates, Inc.

Historical, unpermitted dump sites present obstacles to urban development in some areas in addition to the well-known environmental concerns. Old landfills and unknown or forgotten dump sites that predate current solid waste rules create lingering problems that surface in

unexpected ways. Urban development in many areas in Florida is limited and infilling lowvalue property is common. Conflicts with unknown or forgotten dumps commonly surface as the availability of land decreases and the value of the land continues to increase. Counties and municipalities

surrounded by commercial, residential, and recreational properties.

The Brevard County Natural Resources Management Department decided to excavate and remove the solid waste because of the longterm environmental and economic benefits. The waste excavation and removal allowed the development of the regional stormwater management system to meet federal and state water quality and environmental Brevard Central Disposal Facility and a savings of over \$500,000 in avoided soil import costs.

The project was completed in 2014. The final phase of the project that included excavation and removal of the solid waste and construction of 10 acres of the stormwater pond cost \$2.2 million. This phase required screening over 100,000 tons of material to separate the solid waste from the soil. Over 280,000 tons



of materialincluding 8,000 tons of solid waste-was removed from the site for disposal. Upon completion of the solid waste removal. the property was approved for unrestricted use. The one-time economic and environmental liability was transformed into a stormwater management system to

planning for future infill development of an old dump site may use the Brevard County Fortenberry Regional Stormwater Management System as an example of how new facilities can successfully be developed in place of old, problematic dumps. The Fortenberry site in Merritt Island, Florida was a historical, unpermitted dump site dating back to the 1950s and included filling low-lying land along the Banana River. Originally located in a remote area, the site is now

requirements, promote beneficial commercial redevelopment in the Merritt Island Redevelopment Area, and provide access for the expansion of the adjacent Veterans Memorial Park. A waste excavation and disposal plan was developed that minimized the amount of material that needed to be landfilled. Using landfill mining procedures compiled from similar projects around the state, nearly 90% of the material excavated was recovered for use as soil cover at the facilitate business development that will continue to provide value to Brevard County long into the future.

Special Acknowledgement and Thanks to: Euripides Rodriguez, Brevard Solid Waste Management Department, Director, and Robbyn Spratt Brevard Natural Resources Management Department, Stormwater Engineer

What Is In Your Recycling Stream? The Importance of Knowing!

Part Two of the benefits of conducting waste and recyclables composition studies

Written by Shane Barrett, Kessler Consulting, Inc.

One thing that all public and private sector recycling professionals can agree on is that we would all like to have cleaner recycling streams. One way to solve the age-old dispute over just how much contamination is present in your materials is to conduct a recyclables composition study. Similar to waste composition studies, discussed in the previous newsletter, recyclable compositions studies (RCS) are designed to provide statistically valid composition data regarding the types and quantities of materials, including contaminants, in your recycling stream.

As most professionals are aware, the value of a recyclables stream can vary greatly depending on its composition, e.g., a ton of material high in paper will have less value than a ton of material that is high in plastic and metal containers. This is due to the high value of plastics and aluminum cans compared to the relatively lower value of fiber grades. Utilizing statistically valid composition data, from a well designed RCS, can be the foundation on which revenue is shared between a community and its processor. After all, an equitable revenue share is a win-win for all parties.

Besides material value, a RCS will also reveal not only how much contamination (nonaccepted materials) is present in your recycling stream, but also where such contamination is collected. This information allows you to identify routes that would benefit most from increased education and targeted outreach - allowing staff to focus its limited resources on areas identified by the RCS.

Conducting a recyclables composition study on inbound materials will offer the following benefits:

• Determine the value of your recyclables. Several indices exist that allow you to tie your materials to monthly commodity prices. Based on the composition of your stream and the current value for each commodity, an average market value can be determined on a per ton basis.

• Benchmark current recycling stream contamination levels. Calculate current contamination rate and identify routes for increased education. Conducting studies periodically can identify changes in the recycling stream due to increased educational efforts, as well as changes in packaging and consumer preferences, such as increased use of plastic packaging and decreasing hardcopy newspaper subscriptions.

• Identify additional recycling opportunities. A RCS may reveal materials that are being collected that are not part of your existing program. Working with your processor, you may be able to expand your list of accepted materials. Such items might include plastic tubs and lids and rigid plastics.

Depending on the objective, RCS events can be developed to analyze recycling streams of whole counties, individual cities, or even specific programs, such as park or beach recyclables. Regardless of the scale of the study, RCS results will provide you with valid data on which you can make focused efforts to increase participation and reduce contamination. After all, if you don't measure it, you can't manage it.



What's in Your Wallet?

Written by Lisa Lamppert, MBA, Kessler Consulting, Inc.

Have you ever heard the adage that "budgeting is the art of predicting the unpredictable?" Effective budgeting is more than simply escalating revenues and expenses year over year. Developing an effective budget requires analyzing revenue and expense patterns and incorporating planned or potential changes in a system. Financial stability requires developing a forecast that accurately predicts changes in revenue, provides decisionmaking tools for managing expenses, and maintains a reserve fund to protect the system from unplanned changes.

How financially stable is your solid waste system? A comprehensive rate study is an effective way for any organization to evaluate its system and ensure financial stability. A rate study typically includes a cost of services evaluation, revenue and expenses analysis, schedule of fees, and the development of a forecasting model that integrates all the pieces. A rate study should be conducted regularly as an operational best practice to ensure cost recovery, vitality, and sustainability to a solid waste system.

Regardless of your solid waste system design – how it is funded (Enterprise fund vs. General fund), source of revenue (service fees/nonad valorem assessments, tip fees, processing revenue share, franchise fees, etc.), or categories of expenses (collections, transfer station, landfill, material recovery facility, waste-toenergy plant, education and outreach programs, various "cadillac" services, etc.), a cost of services evaluation helps to equitably determine the cost to provide each type of service to various customer groups. Cost of



services can be used to benchmark current operations and is a great decision-making tool for managing expenses.

A revenue and expense analysis provides a picture of how all the moving parts in a solid waste system



work together. Key internal and external drivers are identified and how they impact the system financially quantified. In a healthy system, all sources of revenue are sufficient to meet annual revenue requirements, including operation and maintenance expenses, payments on existing and proposed debt service, and capital projects. In addition, adequate reserves should be maintained to meet unexpected needs or emergencies and

unplanned opportunities.

Fee schedules should not only be designed to equitably charge for services provided but should also incorporate organizational goals and objectives. Financial incentives can encourage behavior or actions that otherwise would not take place. For instance, if waste diversion is an organizational goal, an incentive to recycle as well as a

disincentive to recycle us well as a disincentive to generate large volumes of waste, will encourage customer behavior toward that goal.

Finally, a dynamic forecasting model provides the hands-on tool that integrates all the parts of a rate study. An effective model provides

the flexibility to adjust key internal and external drivers as changes occur, so that the impact on the system can be understood and managed. The forecasting model is what helps to ensure a vital, healthy system by identifying the implication of changes on the system and consider "what-if" scenarios when considering solid waste management alternatives. When is the last time your organization conducted a rate study

for its solid waste system? There is no better time than now to plan for the future!

Sinkhole Remediation within the Lined Area of a Class I Landfill: Southeast County Landfill, Lithia, Florida

Written by Larry Ruiz, Hillsborough County; Robert Curtis, PE, HDR Engineering, Inc.; and Richard Siemering, HDR Engineering, Inc.

Introduction

The Class I Southeast County Landfill (SCLF) site is located at 15960 County Road 672, Lithia, Florida in Hillsborough County. The permitted Class I landfill includes Phases I-VI and the Capacity Expansion Area (CEA) Sections 7, 8, and 9. Phases I-VI encompasses approximately 162.4 acres and the CEA approximately 34.5 acres (see Figure 1).

On December 14, 2010, a sinkhole developed along the west side of Phase VI, within the landfill footprint of Phases I-VI, at the SCLF. Based on initial observations, the collapse measured approximately 100 to 110 feet wide (at ground surface) and subsequently expanded in width to 150 to 200 feet wide as the sidewalls collapsed. The vertical depth of the sinkhole extended below the bottom clay liner system of the Phase VI disposal area. The existing bottom liner system in Phases I-VI consists of approximately 5 to 15 feet of waste phosphatic clays (clays from the settling ponds from the former phosphatic mining operations at the SCLF). It was apparent from visual observations made on December 14, 2010, and from subsequent investigations, that the sinkhole collapse impacted the Phase VI clay

liner system as well as the existing landfill gas collection and control system (LFGCCS) components.

A Sinkhole Action Plan (SAP) was developed by Hillsborough County Public Works Department, Solid Waste Management Division (SWMD) and HDR Engineering, Inc. (HDR) staff to remediate the sinkhole and to address the impact to the clay liner within the proximity of the sinkhole. The SAP consisted of a five-stage approach and addressed stabilization, investigation/ characterization, sinkhole remediation, and repair or isolating the impacted clay liner. Long-term waste disposal plans for the Phase VI disposal area were also addressed in the SAP.

Stage 1 – Initial Remediation/





Stabilization

Stage 1 of the SAP provided initial stabilization of the sinkhole to minimize further movement and enlargement of the sinkhole. Stage

1 included completion of nine angled compaction grout points, injecting approximately 509 cubic yards of grout in order to stabilize the soils underlying the sinkhole depression and to allow for a geotechnical investigation and subsequent remediation efforts. Stage 1 of the SAP was completed in April 2011.

Stage 2 – Cut/Fill and Waste Relocation

Stage 2 of the SAP provided additional stabilization of the sinkhole by placing controlled low-strength material (CLSM - similar to grout) into the bottom of the sinkhole, backfilling on top of the CLSM with clean soil, and re-grading the existing side slopes. Re-grading was completed to provide for a flatter surface and a safe working environment for personnel and equipment to access the top of the sinkhole during future stages, including performing the geotechnical and

geophysical investigation over thecenter of the sinkhole as part of Stage3. Stage 2 was completed in August2011.

During the development of the sinkhole, components of the LFGCCS within the proximity of the sinkhole were damaged. Following the completion of Stage 2 field work, the LFGCCS within the sinkhole area was temporarily repaired by installing a new above ground header pipe and connecting laterals. These temporary measures were installed to minimize



Photograph of Sinkhole after Remediation



Photograph of SCLF Sinkhole Prior to Remediation Work

landfill gas surface emissions in the proximity of the sinkhole.

Stage 3 – Geotechnical and Geophysical Investigation

Stage 3 of the SAP further defined the characteristics of the lateral and vertical extent of the underlying sinkhole formation and outlined the recommended methodology for the final stabilization of the sinkhole. The Stage 3 geotechnical and geophysical investigations included Standard Penetration Tests (SPT) drilling,

> additional geophysical investigations, and a hydrogeologic analysis of the stabilized site in order to evaluate the cause and extent of the sinkhole, and to determine if additional stabilization was needed. The Stage 3 effort was conducted from November 2011 through March 2012.

Stage 4 – Permanent Geotechnical Remediation

Stage 4 of the SAP included geotechnical borings for assessing the potential of conduits within the proximity of the sinkhole. The objective of the investigation was to stabilize the limestone and loose foundation soils surrounding the sinkhole area by filling channels and voids deep below the sinkhole formation. The Stage 4 plan was prepared by AMEC Environmental and Infrastructure. Inc. (AMEC) and included the installation of a series of concentric deep grout injection points around the exterior limits of the sinkhole. A secondary series

of concentric grout injection points were installed surrounding the first series of points to provide overlapping coverage. The completion of Stage 4 filled voids and solution channels within the limestone layers and provided compaction of the deep

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(Continued from Page 11 - Sinkhole Remediation)

loose soils. The grout injection borings were drilled to approximately 220 to 250 feet below land surface (bls) and compaction grouted from the bottom of the boring to approximately 100 to 150 feet bls.

Stage 5 – Isolation of Impacted Clay Liner

During the final stage of the SAP, Stage 5 further isolated the upper impacted portion of the clay liner system in the Phase VI disposal area. In addition, Stage 5 addressed the temporary final closure of the disposal area surrounding the sinkhole and reconstruction of the LFGCCS. Stage 5 assessed and then isolated the outer limits of the impacted clay liner with a vinyl sheet pile cut-off wall to prohibit leachate from infiltrating into the area of the impacted clay liner. During Stage 5, the LFGCCS that was impacted by the sinkhole was restored and final cover installed beyond the extents of the sinkhole.

Initial Assessment Monitoring Plan

As part of the SAP, the SWMD implemented additional monitoring of groundwater wells in the sinkhole area. The additional monitoring followed the Initial Assessment Monitoring Plan (IAMP) developed by the SWMD and HDR, and approved by the Florida Department of Environmental Protection (FDEP) in December 2010. As part of the IAMP, seven new monitoring wells were installed to provide additional data to supplement data from existing wells. Four wells were installed to monitor groundwater quality in the upper Floridian/Limestone aquifer. Three wells were installed to monitor groundwater quality in the surficial aquifer. These wells were monitored for both water level and a select list of parameters. Initially, all wells were sampled on a monthly basis. Over time, the frequency of monitoring of the three surficial wells was changed to quarterly. All changes in the IAMP were approved by the FDEP. Results of the IAMP sampling have been submitted to the FDEP on a minimum of a monthly basis with the first IAMP report submitted on January 11, 2011.

The water quality observed in the July 2014 IAMP sampling event indicates that one well, which is closest to the sinkhole (approximately 50-feet from sinkhole feature), continues to exhibit impacts to the water quality in the upper Floridian Aquifer. The impacts observed include elevated conductivity, total dissolved solids (TDS), chloride, iron and sodium. These impacts are not unexpected in the immediate vicinity of the sinkhole. Other down gradient monitoring wells exhibit good water quality with no evidence of impact from the sinkhole.

Conclusion

The characterization and successful remediation of the sinkhole at the SCLF, including the installation of additional groundwater monitoring wells and repair of the LFGCCS, was completed in June 2014. Waste filling within Phases I through VI resumed in May 2014 in accordance with the SCLF's Operations Permit. The total cost of the sinkhole remediation, including initial assessments, conducting public meetings, additional environmental monitoring and controls, design, permitting, and construction of each Stage approached \$5.5 million. In conclusion, the approach implemented by the SWMD and HDR for stabilizing and remediating sinkhole has minimized the potential for future impacts to the environment.

As part of the original siting study and design/permitting process in the early 1980s, the geographical area where the SCLF is located was designated as an area of low probability for sinkhole activity. However, as evidenced by the sinkhole event on December 14, 2010, sinkholes can occur even in low probability areas. Will another sinkhole develop at the SCLF? Based on site geotechnical data as well as outside studies conducted by sinkhole experts, the likelihood for another sinkhole developing at the SCLF is low.

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Sarasota County to Join Growing List of Florida Solid Waste Programs with a Landfill Gas to Energy Facility

Written by Jason Timmons, P.E., Sarasota County Public Utilities

Following a growing trend throughout Florida and the United States, Sarasota County is set to have its first landfill gas to energy (LFGTE) facility begin operation in early 2015. The LFGTE facility will be located at the Central County Solid Waste Disposal Complex (CCSWDC) in Nokomis, FL and is being developed through an agreement between the county and Landfill Energy Systems Florida, LLC. (LES). The facility will use landfill gas collected from the recently closed 60-acre Phase I landfill. LES began construction of the facility in July 2014 and anticipates completion and initial startup testing near the beginning of January 2015.

Sarasota County Solid Waste

staff has been working toward a landfill gas to energy project for more than 15 years, beginning with the proposed development of a project to utilize gas from the closed Bee Ridge Landfill. Unfortunately, the project was not able to be developed at Bee Ridge due to limited gas production and, at the time, the recently opened landfill at the Central County facility was too new to meet the needs of a full-scale LFGTE facility.

However, in 2013, the county completed closure construction of the 60-acre Phase I Landfill and installation of the gas collection and control system. With an initial production of more than 1,500 cubic feet per minute of landfill gas and a quality at or over 50 percent methane, a LFGTE project was now within the county's grasp. The county solicited for proposals in late 2012, and in August 2013 the Sarasota County Commission entered into an agreement with LES to finance, own, construct and operate a facility that would convert landfill gas to electricity. LES proposed a facility that would use reciprocating engines to convert the gas to approximately 4.8 MW (3 engines) of power with a future capacity of up to 6.4 MW (4 engines) as the county expands its landfill gas collection system to new landfill cells. The 15-year agreement with LES provides Sarasota County the opportunity to have a state-of-the-art LFGTE facility with no capital outlay and a steady revenue stream based on a percentage of the power purchase revenues collected by LES.



Construction of Sarasota County Landfill Gas to Energy Facility by Landfill Energy Systems Florida, LLC. – erection of outer masonry walls and the Phase I Closure green exposed geomembrane can be seen in the background.

An Unlikely Oasis: Transforming Landfill to Golf Course

Written by David Ferris, Sanford Golf Design

Ferry Point Park Golf Course is a 200-acre former landfill in the Bronx that will soon be home to a 7-acre Community Park, a 20-acre Waterfront Promenade and an 18-hole championship golf course designed by Jack Nicklaus and John Sanford, ASGCA.

In 1948 the park was converted into a landfill. The Sanitation Department operated the site until 1970. The ground laid fallow into the late 1990's when the City's Parks Department attempted to convert the landfill to a golf course.

From a land use perspective, a landfill golf course makes sense because there are few other large tracts available in population centers. Municipalities have seen added benefits as a golf course transforms an eyesore into a valued amenity to residents. Golf courses are often less expensive to build and maintain than openspace parks and can produce revenue.

Golf courses designed atop a landfill have special challenges to be addressed, such as infrastructure, landfill closure requirements, permit approvals, methane monitoring, differential settlement, erosion control, post growin runoff, wetlands, and water quality. In addition, the Ferry Point excavation was kept to a minimum to reduce the impacts of Department of Environmental Conservation (DEC) requiring unearthed municipal solid waste be removed from the site. This resulted in over 2,400,000 cubic yards of fill and cover material to be imported.

An integral part of building this golf course was the 'closing' of the

landfill to meet all DEC regulations. Methane gas was vented to avoid internal combustion. Vents were placed inconspicuously throughout the site in the outer rough's 'links' style mounding. In addition, 20 monitoring







wells were installed to facilitate DEC's requirement for continual monitoring of methane and groundwater.

Differential settling can occur

from decomposing trash and was mitigated in feature areas with deep dynamic compaction. Additionally, all tees and greens are supported by massive 'substructures' that prevent differential settling.

To meet DEC regulations and provide a quality growing medium for the 'links' style course, approximately 400,000 cubic yards of sandy cover material was spread across the entire golf course at a uniform 12" depth. DEC also required a 'demarcation layer' placed between the base grade and cover material. The approved demarcation material was common orange 'snow fence', which was installed in all areas where final grade was within 4' of municipal solid waste.

To accommodate DEC's restriction on water seeping into the trash over 80,000 lineal feet of subsurface drainage was installed. This intricate system delivers subsurface drainage water to the master drainage system and much is recycled back to the irrigation pond.

All ponds and drainage detention areas were lined to prevent water from percolating into the trash layer below. Active and passive venting systems were installed to eliminate the buildup of methane gases under the liners. Micro pools and channels were incorporated into the design of the detention ponds to improve the containment of sediments before reaching the East River.

Despite the many obstacles this project has overcome the end result is a recreational experience unlike any other in the world.

Golf course construction is completed and the course will opened for play in the Spring 2015.

Largo: Curbside Mixed Recycling a Success

6.7 Million pounds recycled in first six months

Written by Marissa Segundo, APR, LEED Green Associate, Recycling Coordinator, City of Largo

Beginning in February, Largo residents began rolling their new Mixed Recycling (single-stream) carts to the curb and now it's a habit. In the program's first six months, 73 percent of Largo's curbside customers have

participated in the recycling program at least once a month. Accurate participation is tracked by Radio Frequency Identification (RFID) tags embedded in the carts.

Residents recycled more than 3,400 tons or 6.7 million pounds of material in to ensure Largo residents were well informed of the new Mixed Recycling program. An educational video was created to inform residents about proper recycling with their new carts:

http://www.youtube.com/ watch?feature=player_ embedded&v=4GONmEBUEcc outstanding strategic public relations programs by Florida practitioners or organizations.

For more information on Largo's Mixed Recycling Program and a complete list of everything Largo recycles, log on to LargoRecyclesMORE.com or call (727)587-6760.



the first six months, an increase of 59 percent over the same time period last year. Garbage has also decreased by 1.7 million pounds over last year. For every ton of garbage collected, a disposal fee of \$37.50 is charged to the City. By diverting material from the County landfill or Waste-to-Energy plant, Largo saved more than \$159,000 in tipping fees over six months.

A comprehensive educational outreach campaign including billboards, mailers and more help "This was the largest infrastructure change in our department since curbside recycling began more than 20 years ago," said Marissa Segundo, Recycling Coordinator. "It was imperative to have a strong communications plan to let residents know how the new program works."

Largo's communication campaign was recognized by a statewide Radiance Award from Public Relations Society of America (PRSA) Sunshine District. This award recognizes View a video about Largo's first six months:

http://www.youtube.com/ watch?v=P5ClabPPrBw&feature=emupload_owner

Member News

20th Anniversary Celebration at Lee County Waste-to-Energy Facility

Lee County's Waste-to-Energy plant celebrated 20 years of generating safe, renewable energy at a community open house event in October. County Commissioners recognized a special group of 14 men who had been with the plant since it began operations, including Lee County Solid Waste Director, Lindsey Sampson and Covanta Lee plant manager, Mike Duff. The Lee County Solid Waste Department is a nationally-recognized enterprise

system providing residents and businesses safe, affordable waste disposal and recycling services. The system utilizes an energy-from-waste combustion process to create clean, renewable energy and single-stream recycling for material recovery. Visit www.leegov.com/solidwaste.



Banks Joins Atkins' Sarasota Office, Leads Solid Waste Services

John Banks Jr., PE, returns to his Central Florida roots and joins the Sarasota office of Atkins, one of the world's leading design, engineering, and project management consultancies. Banks transferred from Atkins' Maryland office to serve as technical director of solid waste services and build on the firm's 40-year history of developing comprehensive solid waste management programs in Central Florida. He will also contribute to overall water and wastewater expertise for clients throughout the state.

"Atkins has been providing integrated solid waste management solutions that encompass all aspects of solid waste facility planning, design, construction, and operations for decades," said Michael Scibelli, PE, the firm's associate vice president. "We have an unwavering commitment to project success throughout the country and John's presence in Florida ensures a continuation of quality service our clients have come to know and expect."

Banks has 30-plus years of environmental engineering experience, including 4 years as a public servant for Manatee County, in the Public Utilities Department and Solid Waste Division. He also served as chair of the Chapter's Landfill Committee and as an instructor at University of Florida's TREEO Center, teaching landfill design courses and portions of the SWANA Manager of Landfill Operations course. Contact Banks at john.banks@atkinsglobal.com or 941.378.0272.

Congratulations SWANA International Road-E-O Winners! Arnie Retzer, City of Clearwater - 1st Place, Tractor Trailer Dennis Rigby, Escambia County - 1st Place, Mechanic Chris Colburn, Hernando County - 2nd Place, Front End Loader

Advertising Opportunities Available

It's not too late too reserve a space in the Spring issue of Talking Trash.

Job Openings

Post an employment notice on the SWANA FL website for just \$100!

Email info@swanafl.org or visit www.swanafl.org for more information.



Name (to appear on nam	ebadge):	
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Company/Organization:	
Address:	
City, State Zip:	
Phone: En	nail:
Traveling with family? Yes No	Please list children's ages

First-Time Attendee?
Yes No Public Sector Private Sector

Registration Fees:	Received by	Received after
SWANA Members:	<u>January 8, 2015</u>	<u>January 8, 2015</u>
□ Full Conference - Sunday/Monday/Tuesday	\$250	\$300
Single Day - Monday	\$150	\$200
Single Day - Tuesday	\$100	\$150
Exhibitor (includes 6' table & 1 full conference registration)	\$550	\$600
Exhibitor <i>plus</i> 90-Second Spot (includes 6' table & 1 full conference reg	gistration)\$750	\$800
Non Members:		
□ Full Conference - Sunday/Monday/Tuesday	\$400	\$450
□ Single Day - Monday	\$250	\$300
□ Single Day - Tuesday	\$150	\$200
Exhibitor (includes 6' table & 1 full conference registration)	\$750	\$800
Exhibitor <i>plus</i> 90-Second Spot (includes 6' table & 1 full conference reg	gistration)\$950	\$1000
Other: Single Day Speaker - Day of Presentation Young Professionals (35 and under) and Retired Members (full confe Student/Regulatory Agency	\$100 erence)\$200 Complime	\$150 \$250 ntary (meals excluded)
Meal Tickets: Sunday Reception \$50 Monday Lunch \$50 Xame (if different from above):	Monday Dinner \$75	□ Tuesday Lunch \$50
Dietary Restrictions:		
Total Due: \$		
□ Check (Payable to SWANA FL) □ VISA □ MasterCard □ I	Discover 🛛 America	n Express
l Number: Expiration Date:		
Cardholders Name:		

Billing Address: _

Meals: Full conference registration includes welcome reception on Sunday; continental breakfast, lunch and dinner on Monday; and continental breakfast and lunch on Tuesday. Single day registration includes meals scheduled on that day only.

Refund Policy: Refunds, less \$25 processing fee, will be issued upon receipt of written request by Jan. 15, 2015. Due to meal guarantees, no refunds will be issued after Jan. 15, 2015, and we will invoice for no-shows who do not cancel by Jan. 15, 2015. Please fax written requests for refunds and cancellations to (727) 231-0693.

Submit Registration Form & Payment to:

SWANA Florida Sunshine Chapter, 3724 Johnathon Ave., Palm Harbor, FL 34685 or FAX to (727) 231-0693 Questions? Call Crystal at (727) 940-3397 or email info@swanafl.org



Sponsorship Opportunities

We invite you to become a sponsor of Winter Waste Conference 2015. As a conference sponsor, your organization will be recognized as a valued supporter. All general and exclusive sponsors will receive recognition as follows:

- * In pre-conference promotional emails
- * On the SWANA FL website
- * On conference signage and in program
- * On screen prior to the conference general sessions and during all breaks

By actively supporting this event, your organization will benefit by strengthening its prominence as a leader in the solid waste industry and by increasing your network of contacts and established partners within SWANA.

GENERAL SPONSORSHIP OPPORTUNITIES:

□ Platinum Sponsor - \$1,500	□ Gold Sponsor - \$1,000	□ Silver Sponsor - \$750	Bronze Sponsor - \$500
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EXCLUSIVE SPONSORSHIP OPPORTUNITIES: (available on a first-come, first-served basis)

Monday Dinner - \$5,000 - includes sole recognition at dinner, one full-conference registration and complimentary exhibit table
 Monday Lunch - \$4,000 - includes sole recognition at lunch, one full-conference registration and complimentary exhibit table
 Tuesday Lunch - \$4,000 - includes sole recognition at lunch, one full-conference registration and complimentary exhibit table
 Sunday Welcome Reception - \$3,000 - includes sole recognition at the reception and one full-conference registration
 Water Bottle - \$2,000 - includes logo on water bottles that will be distributed to all attendees
 Conference Bags - \$1,500 - includes logo on bags that will be distributed to all attendees

□ Name Badge Lanyards - \$1,500 - includes logo on lanyards that will be distributed to all attendees

Representative Name (to appear on	namebadge	e):			
Company/Organization:					
Address:					
City, State Zip:					
Phone:		Email:			
Total Due: \$					
Check (Payable to SWANA FL)	□ VISA	□ MasterCard	Discover	American Express	
Card Number:				Expiration Date:	
Cardholders Name:					
Billing Address:					

Submit Registration Form and Payment to:

SWANA Florida Sunshine Chapter, 3724 Johnathon Ave., Palm Harbor, FL 34685 or FAX to (727) 231-0693 **Questions?** Call Crystal at (727) 940-3397 or email info@swanafl.org

Registration deadline for sponsors to be included in participant materials and on signage is January 15, 2015.



Exhibitor Information

Enhance your product awareness and brand recognition!

Increase your sales and outreach capabilities!

Don't miss this opportunity to showcase your products and services during Winter Waste Conference 2015. The program will take place at the Clearwater Beach Marriott Suites on Sand Key, Florida, February 8-10, 2015.

- Act quickly! There are only 20 table-tops available.
- Table-tops will be located in the Sand Key Ballroom Foyer, just outside the general session and breakout rooms.
- Two continental breakfasts and all morning and afternoon breaks will take place in the Sand Key Ballroom Foyer.
- Table number/location will be assigned based on registration date. The earlier you register, the closer to the meeting rooms you will be.
- All display materials must fit on top of 6' table. Exhibitors may not move tables to make room for large displays.
- If you register by January 8, table-tops are only \$550 for members and \$750 for non members.
- Each exhibitor registration includes one full-conference registration. Each additional person at the table/booth must register for the conference separately.
- Registration deadline for exhibitors to be included in participant materials and on signage is January 15, 2015.

New This Year! - "90 Seconds to Impress" - Upgrade your exhibitor registration to include a 90 second presentation spot in front of conference attendees. You'll have the opportunity to address the group during a general session, share information about your company, give your best sales pitch and encourage people to stop by your exhibit table.

Exhibitor Schedule
<u>Sunday</u> 1:00 - 4:30 p.m. / Set-Up (All exhibits must be set by 4:30 p.m.)
Monday 7:30 a.m 5:00 p.m. / Breakfast & Breaks in Exhibit Area
Tuesday 7:30 a.m 5:00 p.m. / Breakfast & Breaks in Exhibit Area
5:00 - 7:00 p.m. / Tear-Down (All exhibits must be removed by 7 p.m.)

Questions?

Contact the SWANA Florida Sunshine Chapter at (727) 940-3397 or email info@swanafl.org

Talking Trash Newsletter

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