

Florida Specifier

Practical Information For Environmental Professionals

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FRC in review 1, 8, 9

Feature coverage of the highlights from the 2016 Florida Remediation Conference in Orlando.

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DEP and Foley Cellulose are working to restore the Fenholloway River's water quality through the installation of a new activated sludge wastewater treatment plant and construction of a 15-mile bypass pipeline.

Mosaic sinkhole update 7

As of mid-December, Mosaic Fertilizer and DEP reported that over 1,200 private drinking water wells had been sampled in the vicinity of Mosaic's New Wales plant where a sinkhole opened up in late August. Water analysis shows that 1,160 of those wells are providing water that meets Clean Water Act standards.

Opinion: EPA nomination 11

Very rarely do we delve into the political sphere on the pages of the *Specifier*. But the nomination of Scott Pruitt for EPA administrator is so wrong in so many ways, we couldn't help ourselves.

Tri-state water war update 15

The Florida versus Georgia water wars trial regarding the allocation of water from the Apalachicola-Chattahoochee-Flint river system recently concluded. We now wait for a decision from the special master.

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Got a story lead?

Got an idea for a story? Like to submit a column for consideration? Fire when ready. And don't forget to fill us in on your organization's new people and programs, projects and technologies—anything of interest to environmental professionals in Florida. Send to P.O. Box 2175, Goldenrod, FL 32733. Call us at (407) 671-7777; fax us at (407) 671-7757, or email mreast@enviro-net.com.

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Photo by Roy Laughlin

Participants at the 2016 Florida Remediation Conference in Orlando compare notes on Day One of the conference in December. In spite of being cancelled in October due to the unexpected visit by Hurricane Matthew, the conference drew over 450 soil and groundwater cleanup practitioners to town. See conference wrap-up below.

Monroe County officials work to improve poor water quality in canals

By BLANCHE HARDY, PG

The Monroe County Commission held a special meeting in November to discuss the restoration of county canals.

They convened to determine how to best develop and finance a plan to restore the 300 impaired canals within their jurisdiction. Unincorporated Monroe contains 229 of the canals.

A significant number of the residential canals in the Florida Keys do not comply with state water quality standards.

The Florida Department of Environmental Protection noted that the Water Quality Action Plan of the Florida Keys National Marine Sanctuary identifies impaired water quality in residential canals as a priority for corrective action.

To establish an understanding of current conditions, representatives from Florida International University prepared a report for the commissioners on current restoration efforts including results of biological and water quality monitoring of canals.

The FIU scientists reported that backfilling, the removal of muck and improved flushing through larger culverts have resulted in immediate improvements to water quality.

Most remediation techniques are showing positive results. Indicators of success include increased visibility and more macroalgae, seagrass, fish and other sea life in the restored canals.

On a less positive note, they also reported that the canals are affecting the quality of adjacent waterbodies.

"We know that materials are transported out of the canals and it is not just nitrogen and phosphorus, which is what we are really concentrating on, but also human pathogens," said FIU Department of Biology Professor James Fourqurean, PhD. "Caffeine is found all over the benthic system out here and you can actually find Crestor® out on the reef."

Port of Miami study attributes reef kill to number of causes

By ROY LAUGHLIN

Between 2013 and 2015, U.S. Army Corps of Engineers contractors dredged the Port of Miami ship channel in one of the final stages of a \$1 billion port improvement project to increase capacity and accommodate larger vessels.

Coral reefs run alongside the ship channel and, in spite of planned measures to minimize sediment smothering on the adjacent reefs, numerous hard corals died.

Environmental activists and reef advocates charged that sediment covered much larger areas than the corps predicted and that many more colonies of endangered hard coral reef-forming species were killed or were in decline by the spring of 2016.

Corps project managers countered that a white coral plague outbreak was responsible.

Researchers from the National Marine Fisheries Service and the University of Miami took a close look at the corps' data, including photographs taken during the dredging operations, as well as observations and data from local activists, some of whom were diving on the reef as the dredging was underway.

The researchers released their peer-reviewed research report in November.

It attributed the coral mortality to a number of causes—high temperature stress in the late summers of 2014 and 2015, a white plague outbreak at the end of 2014 and continuing for several months thereafter, and prolonged sedi-

ment smothering.

The NMFS report documented significant sediment coverage across three reef sub-areas, extending as far as 700 meters north of dredging operations in the ship channel.

The report included satellite photographs taken during dredging operations that showed suspended sediments over the most easterly reef tract.

But when sediments settled out, they accumulated to the greatest degree on the inner reef, the one furthest west and

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Technology development, engineering research highlight FRC 2016 content

By ROY LAUGHLIN

Soil and groundwater cleanup has evolved from a suite of technologies into an entire ecosystem—an ecosystem whose web includes three interconnected domains: science and engineering; technology development and its application; and laws, rules and regulations.

The 2016 Florida Remediation Conference included useful discussions focused on all three domains. In each, FRC speakers brought new insights to the conference.

Science and engineering research is not the primary focus of FRC. But this year, one session focused specifically on polyfluorinated organic substances used in firefighting foams and fire re-

tardants—the subject of recent U.S. Environmental Protection Agency regulatory action establishing a 70 parts per trillion maximum contaminant level for water.

Environmental research on these compounds dates back to the late 1960s. These will be some of the most technologically challenging chemicals since, perhaps, mercury to understand and orchestrate a successful remediation effort that meets the notably low drinking water standard.

William Kerfoot, PhD, president of Kerfoot Technologies Inc. in Mashpee, MA, pointed out that effective chemical treatment occurs only by breaking

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EPA announces drinking water safety plan focused on six priority issues

Staff report

The U.S. Environmental Protection Agency released the outlines of a cooperative plan to ensure the safety and reliability of drinking water.

The plan identifies six priority areas with proposed actions associated with each. Proposed actions include promoting regional partnerships, reinvigorating training programs for system operators, sharing best practices and establishing an online water funding portal.

The funding portal, in particular, fosters water infrastructure financing and management in disadvantaged, small and

environmental justice communities. Stakeholders in the multilevel proposal include government, utilities, community organizations and others.

The plan also proposed more effective oversight of the Safe Drinking Water Act. Efforts here include electronic compliance data reporting, releasing triennial EPA reviews of state programs and developing indicators that identify troubled systems.

Improving source water protection and water supply resilience are other priority areas. They involve updating and responding to source water vulnerability assessments, building local partnerships to protect watersheds, promoting initiatives that

enhance resilience to climate change and extreme weather events, increasing source water monitoring pilot projects, and promoting water efficiency and reuse.

Improving public education, risk communication of water safety and transparency are other priorities. This includes developing indicators to improve understanding of data presented on the Internet and improving risk tools.

The final priority, reducing lead risks, will focus on improving implementation of the current Lead and Copper Rule through enhanced oversight, promoting lead service line replacement and revising guidance for handling lead exposure in schools.

This priority area also includes evaluation of critical options to be incorporated into a revised Lead and Copper Rule, the EPA's primary tool for ensuring low copper and lead levels in drinking water.

Renewable energy installations. The U.S. Department of Interior's Bureau of Land Management announced a new rule establishing a competitive bid process for renewable energy installations on federal land similar to that which applies for oil, gas and coal exploitation.

The new plan provides financial and other incentives for renewable energy companies to place wind turbines or solar panels in areas that do not conflict with wildlife habitat.

The new rule is a revision of a 2009 Obama administration rule that provided renewable energy companies with broad access to designated federal property for wind and solar power generation. Since then, conflicts between wildlife habitat and extensive renewable power development have become apparent.

In 2014, the Interior Department proposed modifying the 2009 rule to use a "smart from the start" approach. The goal is to reduce adverse renewable energy effects on wildlife such as birds flying into wind turbine blades or tortoises having their habitat covered with solar panels.

In this case, the Interior Department offers incentives for development in areas with fewer natural resource conflicts.

The new rule "provides a framework to support all of the landscape planning we've done to better plan for and manage wind and solar development," according to one BLM official.

The choice of placement areas is made before planning and permitting processes begins, making the latter potentially much quicker and easier.

Clean Power Plan. While the statutory components of the Clean Power Plan are under a stay issued by the Supreme Court, the Obama administration in its final months moved forward with voluntary components of the plan. That includes establishing a voluntary cap-and-trade carbon dioxide emission credit program.

In early November, the EPA sent a final model trading rule to the White House Office of Management and Budget for review. Review by the office is a final step before the EPA can issue a rule.

The CPP requires existing power plants nationwide to reduce carbon dioxide emissions. The plan assigns each state a reduction target, but allows flexibility to states for achieving compliance. That flexibility includes emission credit trading.

Cap-and-trade emission credit programs have been successful for other emissions because they give states a structured compliance mechanism approved by EPA and capable of being widely used.

Voluntary cap-and-trade emission credit programs are beneficial to coal-burning power plant owners that would otherwise face electricity production cuts in order to meet reduced emission standards.

Purchasing emission credits allows continued operation, though at an increased cost per kilowatt cost as a result of emission credit purchases.

However, it is unlikely that the new credit trading plan will see the light of day given the incoming administration's plan to roll back environmental regulations, including the CPP.

Chemical review under reformed TSCA. The Frank R. Lautenberg Chemical Safety for the 21st Century Act, a revision of the Toxic Substances Control Act, was passed by Congress last summer. It requires the EPA to substantially increase chemical safety reviews.

In late November, the agency announced the first 10 chemicals to be evaluated under the new rule, drawn from the 90 chemicals on the EPA's 2014 TSCA Work Plan.

The selected chemicals include 1,4-dioxane, 1-bromopropane, asbestos, carbon tetrachloride, cyclic aliphatic bromide cluster, methylene chloride, N-methylpyrrolidone, pigment violet 29, tetrachloroethylene, and trichloroethylene.

Their placement on the list is based on "potential for high hazard and exposure as well as other considerations," according to the EPA.

Under the amended procedures, the agency has a statutory schedule of three years to complete risk evaluations. Within the first six months, the agency must release a scoping document for each chemical.

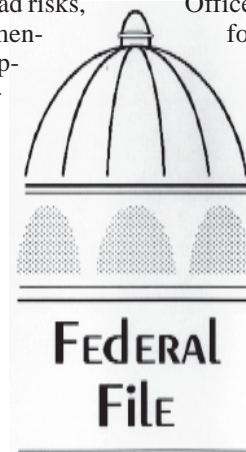
That scoping document evaluates hazards, exposures, conditions of use and potentially exposure to susceptible populations that the agency intends to consider in its evaluation.

The full evaluation, to be completed within the remainder of the three-year process, will determine whether the chemicals pose an unreasonable risk to human health and the environment. If the EPA determines they do, the agency must mitigate that risk within two years.

The agency will continue to add new chemicals to its work plan through a formal process. All chemicals on the EPA Work Plan must be reviewed.

As the agency completes a chemical's risk plan, it must immediately begin a risk plan for another chemical on the list, substantially increasing the number of chemicals evaluated.

"By the end of 2019, EPA must have at least 20 chemical risk evaluations ongo-



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Florida business groups file lawsuit over pollution notification rule

Staff report

State environmental officials are facing a challenge from five major business groups over a plan to impose new requirements for notifying the public when pollution incidents occur.

The challenge has been filed by Associated Industries of Florida, the Florida Farm Bureau Federation, the Florida Retail Federation, the Florida Trucking Association and the National Federation of Independent Business.

A hearing on the challenge was set for late December.

The Florida Department of Environmental Protection issued a proposed rule that includes requirements for businesses to notify the media about pollution releases.

The business groups said the proposed rule oversteps the department's legal authority and will create excessive regulatory costs.

High Springs phosphate mine nixed. High Springs city commissioners voted against a proposed phosphate mine in North Florida.

The proposed 10,775-acre mine would have bordered the Santa Fe River and straddled the New River, a major tributary that divides Union and Bradford counties.

Opponents said the mine would impact both water quality and the supply of drinking water for the state.

In April, Union County voted in a one-year moratorium on mine permit applications. Bradford County did not issue such a moratorium.

Glades drilling rejected. State environmental officials rejected a proposal to drill for oil in the Everglades about six miles west of Miramar.

The application was submitted by Kanter Real Estate LLC to drill an exploratory well in five areas of Everglades in western Broward County.

Environmental activists and city government officials strongly opposed the drilling proposal.

The company has the right to appeal.

In denying the application, DEP said the company failed to show that enough oil was there to justify a project in that location.

The company proposed to drill an exploratory well about 11,800 feet below the surface at a site about five miles west of U.S. 27 and ten miles south of Alligator Alley.

High merc levels in dolphins. Mercury contamination has been found in South Florida dolphins.

Scientists from Florida International University examined dolphins from the Lower Florida Keys, Everglades National Park and Florida Bay, looking for mercury and organic pollutants in their skin and blubber.

They found the highest levels of mercury concentration ever recorded.

Mercury can disrupt the immune system and reproduction of dolphins, making the animals more vulnerable to infection and disease.

Other organic pollutants were examined as part of the study, including pesticides.

The research team plans to expand the study to examine mercury contamination in other species, including sharks, alligators, fish and more.

St. Pete, clean city. St. Petersburg has become the first city in Florida to commit to 100 percent renewable energy.

City council members have agreed to allocate \$250,000 of BP oil spill settlement funds to develop a plan that will guide the city to 100 percent clean, renewable energy.

The plan also includes components of a climate action plan, a resiliency plan and ways for St. Pete to achieve a five-star community rating.

The 100 percent clean energy roadmap

builds on an executive order issued by Mayor Rick Kriseman to achieve a net-zero energy goal for the city.

Public utility considers power options. Lakeland Electric is looking into new ways to meet its future power needs due to economic, regulatory and environmental pressures.

One option to meeting power needs is nuclear, but officials are concerned about nuclear power's expense. Florida Power & Light owns the four active nuclear reactors in the state.

General Manager Joel Ivy said smaller, modular reactors jointly owned with other utilities may be a manageable option for Lakeland Electric.

Meanwhile, the utility will continue making plans to respond to the Clean Power Plan, officials said.

Key West solar. Estimates show that the solar arrays at the Key West city hall can convert enough of the sun's energy to

power ten average-sized Florida houses each year.

The panels should provide up to two-thirds of the building's electricity, according to Marathon-based installer Sea Air Land Technologies Service Inc.

If the city moves ahead with plans for a third solar array, the building could be entirely powered by the sun.

If surplus power is generated, it will be fed back into the energy grid and the city will receive credits.

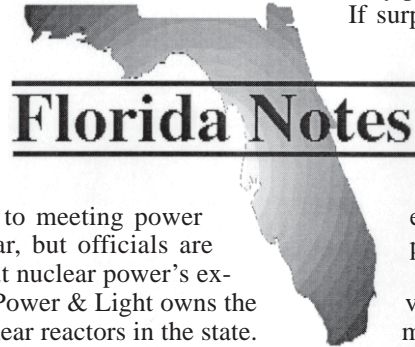
The panels also provide benefits to the city's goal of achieving Leadership in Energy and Environmental Design platinum certification.

The arrays and the shade provided by them combine for as many as 12 of the 80 points needed for LEED platinum rating.

Company news. Alpha-Omega Training and Compliance Inc. announced the formation of ACES-3 LLC.

The new Cocoa, FL-based firm will specialize in environmental engineering, occupational health & safety training and

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Florida Ethics Commission clears SJRWMD board chairman of violations

Staff report

At its December meeting, the Florida Ethics Commission found no probable cause to support two complaints of unethical behavior by John Miklos, chairman of the governing board of the St. Johns River Water Management District.

In addition to his role as district chair, Miklos is the president of Bio-Tech Consulting Inc.

The city of DeBary hired Bio-Tech to assist in the acquisition of 947 acres of conservation land around Gemini Springs from the water management district. The

city wanted to use the land zoned for conservation to construct a housing development.

The commission found no probable cause to believe that Miklos demonstrated a conflicting contractual relationship when he advised the city in acquiring the land owned by the district.

The commission also found no probable cause to find that Miklos accepted compensation given to influence his official action.

Dade City hires rate advisor. In November, the Dade City Commission hired

Public Resources Management Group of Maitland to conduct a five-year water, re-use water and sewer rate study.

Dade City has not increased its rates in several years. In seeking a consultants' advice, the city commission wants to ensure that its service costs are fair and consistent with the service provided.

The city has planned future infrastructure improvements. The rate study will help ensure that the improvements can be funded through appropriate charges for city services.

It is possible, according to a city official's statements quoted in a local news source, that Dade City utility rates could drop in response to the findings of the rate study.

The total cost of the study is expected to be \$86,500. The initial phase will begin this fiscal year at a cost of \$24,000.

It will be followed in the ensuing four years by additional analyses of budgets and costs, at an annual cost of \$16,000.

The Dade City Commission approved the five-year contract by a 4-1 vote.

Pensacola to upgrade gas lines. The Pensacola City Council approved a \$15 million financing plan to underwrite costs of natural gas pipeline installation.

At a special meeting requested by the mayor to consider the issue, the city council locked in a 1.97 percent interest rate on the loan to pay for the work.

The majority of the funding, \$11 million, will pay for replacing and modernizing old gas lines that do not meet new standards to reduce leaks and improve reliability.

The city prioritized lines to be replaced based on leak rates and visible deterioration.

About 15 percent of Pensacola Energy's existing gas pipeline distribution system will be replaced ahead of mandated replacement schedules.

Some of the pipelines on the replacement schedule may be nearly a century old in sections of West DeSoto Street, West Jackson Terrace, Gettysburg Drive and Millwood Terrace.

Gas line replacement will occur over the next three years and will be coordinated with sidewalk repair and replacement with gas lines being replaced first and then sidewalk work following.

About \$3 million of the approved financing will pay for gas line installation in areas of new construction including Per-

dido Key and Nine Mile Road.

About \$1 million will be used to replace old residential gas meters.

Lake Wales to extend water, sewer. Lake Wales City Commissioners approved funding for potable water and sewer line extensions along State Road 60.

The line extensions will provide service to the Lake Wales Airport and continue to a termination point near West Lake Wales Road.

The city received bids ranging in price from \$5.4 million to \$10.4 million.

The city council approved the \$5.4 million bid for construction from Tampa-based Harris-McBurney Co., which will install both water and sewer line extensions.

Funding for the project comes from a low interest loan from the state revolving fund with \$3.2 million slated for the sewer project and \$2.13 million to pay for extending potable water lines.

The Florida Legislature also contributed to the work through a \$250,000 grant. Construction will begin in early 2017.

Fort Walton Beach infrastructure. Like many Florida municipalities, the city of Fort Walton Beach has significant infrastructure upgrade needs. Chief among them is public safety at its Hollywood Boulevard public works field office and at City Hall.

In June, 2015, the city hired AVCON Inc. of Niceville to conduct a facility study. That study noted that the public works office's front façade had been torn off, the rain gutters were failing and rainwater was leaking into building.

The Pensacola's City Hall building, built in 1963, has been flooded several times. Corroding rebar is now visible in some of the concrete beams supporting the building. AVCON recommended both buildings be replaced immediately.

To follow up on AVCON's recommendations, Fort Walton Beach hired Ajax Building Corp. of Panama City and Sam Marshall Architects of Pensacola.

The firms will prepare 5-to-10 and 20-year master plans for the city to consider.

The master plan is expected to include the cost of renovating, repairing or replacing buildings considered in the study, identifying funding and budgeting mechanisms, and suggesting new sites for facility relocation.

Bristol water storage. The city of Bristol in Northwest Liberty County near the Apalachicola River completed a potable water supply project.

The city now has a new 200,000-gallon potable water storage tank and high service pumps.

Completion of the project ensures adequate potable water storage and will aid public safety by ensuring that the fire department has enough water at sufficient pressure to fight fires.

Funding came from two grants totaling \$820,748 provided to Bristol by the Northwest Florida Water Management District in fiscal years 2013 and 2015.

Apopka reclaimed water main. By early 2017, the city of Apopka will have a new reclaimed water main along Kelly Park Road between the intersections of Jason Dwellie Parkway and Golden Gem Road.

The new main is about 1.5 miles long. It will supply reuse water to the high-density Kelly Park Crossing development and to users on Ponkan Road.

It is expected to provide 7.5 million gallons per day of alternative water supply to displace withdrawals from the Floridan Aquifer.

The total project cost is \$1.428 million.



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WATCH
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Florida Specifier

Foley Cellulose moves forward with mill's wastewater treatment upgrades

By ROY LAUGHLIN

The cellulose fiber mill near the Fenholloway River now owned by Foley Cellulose has operated in Taylor County since 1954.

Effluent from now-abandoned industrial processes used at the mill wreaked environmental havoc on the river's water quality.

Its effluent depleted the river of oxygen and added salts, polychlorinated dioxins and dissolved organic substances that, in combination, shut down the river's ecology.

The Fenholloway for years had an unrivaled reputation as Florida's most polluted waterway.

But the Fenholloway's status started to improve with the passage of the Clean Water Act. Both the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection worked with the company to modify the plant's cellulose refining process, making it less polluting.

Through the 1990s, the plant upgraded both its wastewater treatment technologies and fiber refinement processes, and stopped using elemental chlorine for bleaching.

The efforts reduced contaminants in the plant's effluent and improved water quality in the Fenholloway River.

But salinity levels—high dissolved solids in particular—prevented the 40-million-gallon-per-day effluent stream from meeting Class III water criteria for the freshwater river.

In 1994, DEP issued an opinion that improvements to the mill's effluent treatment processes could improve Fenholloway River water quality to Class III standards.

In 2003, the EPA, dogged by the per-

WATCH

From Page 4

Local funding, \$714,000, covered half the cost. The St. Johns River Water Management District and Florida DEP shared equally, \$356,000 each, to cover the other half of the funding for construction.

Hillsborough County discharge. During a wastewater collection line valve replacement in November, a failure of bypass piping released about 200,000 gallons of untreated wastewater to Rock Creek in Hillsborough County.

The discharge lasted about three hours until county contractors repairing the line stopped the discharge.

The rupture and subsequent wastewater release did not contaminate tap water supplies. But county officials advised the public not to fish, wade or swim in Rock Creek or in Tampa Bay near the mouth of the creek.

The county advisory was implemented via the new DEP emergency notification rule.

Volusia County wetland rehydrated. A wetland in Volusia County's Tiger Bay State Forest will be rehydrated with the completion of weir construction.

The weir holds back water in a canal dug in 1943 through a 150-acre wetland in East Daytona.

The water will rehydrate the wetland and water from the rehydrated wetland will infiltrate into the underlying surficial and Floridan aquifers. The retained water will also benefit adjacent Indian Lake.

The Tiger Bay State Forest Project was part of an agreement arising from Daytona Beach's consumptive use permit renewal in 2013.

The city agreed to significantly curtail pumping from its wells in Tiger Bay State Forest, substituting waters from a well field further east.

The weir project, originally budgeted at \$260,000, was completed for \$193,000.

Weir projects—effective, low cost and low tech—are increasingly used to rehydrate drained wetlands while providing flood control.

sistent high salinity in the effluent and not amenable to further reductions by treatment improvements, concluded that the only way to achieve "fishable, swimmable" water quality would be by relocating the mill's effluent outfall through a 15-mile pipeline to discharge near the mouth of the Fenholloway River.

In August, 2015, DEP and Foley Cellulose entered into a consent agreement that would finally, but not immediately, restore the Fenholloway River's water quality to Class III standards.

The agreement included installation of a new activated sludge wastewater treatment plant to treat process water and construction of a 15-mile bypass pipeline with an effluent discharge point approximately 1.5 miles from the mouth of the river.

Foley Cellulose Public Relations Manager Scott Mixon said that process changes and the activated sludge treatment will allow the plant to meet all water quality standards, except for salinity.

By releasing the effluent to the estuarine portion of the Fenholloway's mouth, a different standard applies, which the salty effluent meets.

The consent agreement required a series of upgrades that, in tandem, will lower effluent contaminant levels. Those include upgrades to brown stock washing and screening operations to eliminate the Decker seal tank discharge and lowering the washable salt cake carryover to the bleaching processes.

These improvements have been completed.

"Foley Cellulose has completed pilot plant studies to determine the best available wastewater treatment system that we will use to treat the effluent prior to discharge," said Mixon. "We will be notifying DEP," as stipulated by the consent agreement.

The activated sludge treatment plan is now under review by DEP and construction is slated for 2016.

Once the treatment plant is operational, Foley is obliged to begin construction of a five-foot diameter effluent pipeline by early March 2019, with completion of the pipeline and its diffuser near the mouth of the Fenholloway River expected by March, 2021, per the consent order.

No further releases upstream would be permitted after the pipeline becomes operational.

As early as the 1990s, the mill owners understood that their National Pollutant Discharge Elimination System permit was facing stricter effluent standards and began process modifications and wastewater treatment upgrades to meet standards for chlorinated compounds, dissolved or-

ganic matter, and nitrogen and phosphorus nutrient content above Florida's recently enacted numeric nutrient standards.

Company officials said that the plant's oxygen delignification system reduced chlorinated compounds by 68 percent, color by 54 percent, oxygen demand by 26 percent, total phosphorus by 36 percent, total nitrogen by 43 percent and discharge volume by 14 percent.

Clearly, the mill's management has a record of process improvement that has reduced effluent contaminants, and has committed itself to a multiyear capital improvement effort to raise water quality in the Fenholloway River to meet Class III standards by 2021.

In August, 2015, DEP's Northeast District issued an NPDES permit that incor-

porated the terms of the 2014 consent agreement.

Foley also has a revised pipeline construction permit request pending with the U.S. Army Corps of Engineers.

In spite of the controversy over Foley's pipeline project and water treatment system upgrades, the paper company is pressing forward with the project to reassure the public of its adequacy.

"Compliance and integrity guide us to comply completely with the order," said Mixon. "We want to sustain the mill and bring the Fenholloway River back to Class III standards."

It appears that in the two-plus decades since 1994, paper mill owners and regulators have implemented a concrete plan to do just that.

TBW awards \$23,300 in mini-grants

Tampa Bay Water announced the winners of its source water protection mini-grants.

Keep Tampa Bay Beautiful will receive \$10,000 for its environmental education program. Keep Pinellas Beautiful will also receive \$10,000 to expand a watershed education program.

Florida Southern College will receive \$3,300 to develop a source water steward-

ship program.

The mini-grants were presented by Tampa Bay Water's board of directors at its regular board meeting.

All mini-grant applications received were reviewed and screened against the program's selection criteria.

Funds will be granted in 2017. Since 2008, Tampa Bay Water has invested more than \$170,000 in its mini-grant program.

Additional reactors at FPL's Turkey Point Nuclear Generation Station under scrutiny

By BLANCHE HARDY, PG

In June of 2009, Florida Power and Light tendered an application to the U.S. Nuclear Regulatory Commission to install two new Westinghouse Advanced Passive 1000 pressurized-water nuclear reactors at its Turkey Point facility near Homestead in Miami-Dade County.

In October, the NRC forwarded its final environmental impact statement with a finding no significant impact for the proposed reactors to the U.S. Environmental Protection Agency.

This cleared one of the final hurdles in approval of the new reactors.

The schedule for the mandatory hearing—the last step before the commission's decision on whether or not to issue combined licenses for Turkey Point Units 6 and 7—is currently under consideration.

Work on the proposed reactors had been on hold while FPL addressed hypersaline water contamination emanating from the cooling canals of the existing reactors.

But with remediation of the saline plume underway, FPL is now proceeding with the new reactor application process.

"Environmental excellence is a core

value at FPL," said Peter Robbins, nuclear communications manager with FPL's parent company, NextEra Energy Inc. "Nuclear power plants have one of the lowest impacts on the environment of any energy source.

"They avoid the burning of fossil fuels—emitting virtually no air pollution—and use little land for production purposes."

The proposed reactors have not been welcomed with open arms by some environmental advocates.

In late November, Citizens Allied for Safe Energy delivered their second petition to the NRC to intervene and requested a hearing in opposition to the environmental impact statement.

CASE filed and was granted an initial petition to intervene in August, 2010.

But FPL officials maintain that their plans were adequately evaluated and passed muster.

"After an exhaustive and comprehensive review of the proposed Turkey Point Units 6 and 7 project, including the plans to safely use reclaimed water for cooling, the independent Nuclear Regulatory Commission's staff concluded that 'there

are no environmental impacts to preclude issuing combined licenses to build and operate two reactors next to the existing Turkey Point nuclear power plant,'" Robbins said.

CASE's petition centers on two fundamental themes: the potential intrusive impact on adjoining wetlands, and surface and subsurface ecosystems and water supplies; and potential impacts to the proposed reactor systems as a result of predicted sea level rise and storm surges.

The petition includes four contentions. In the first, CASE states that the use of reclaimed water available from Miami-Dade County for use in the proposed cooling towers was not adequately evaluated and the time before installation of the reactors in 2020 or later may render the required reclaimed water treatment plant financially infeasible.

In the event the wastewater treatment plant and conveyances are no longer feasible or the wastewater treatment plant is terminated by abandonment or relocated due to sea level rise, FPL would instead use proposed radial collector wells to provide water from the Upper Floridan Aquifer.

CASE believes this could reduce available public water supplies and increase the probability of saltwater intrusion of the aquifer.

CASE noted that the aquifer is already challenged and under rationing.

Their third contention is that the impact of injecting toxic chemicals and liquid radioactive waste-laden cooling water from the reactors directly into the boulder zone was not fully evaluated in the environmental impact statement.

CASE said that deep well injection of wastewater potentially containing tritium, cesium-134, cesium-137 and strontium-90 approximately 3,000 feet below land surface may threaten the entire Biscayne Aquifer.

Their fourth contention is that the National Environmental Policy Act was not fully honored by NRC staff that approved measures potentially harmful to the environment.

CASE also believes that the evaluation of requirements to operate the reactors by computer model presents a high degree of uncertainty.

"We will be reviewing the allegations made by CASE in its petition, which was filed after the environmental impact statement was issued, and will respond at the appropriate time," Robbins said.

"It's important to note that the system will be closely monitored and is designed to ensure that upward flow from the Floridan Aquifer is not taking place."

Pipeline discharge draws attention from regulators, activists

Staff report

State environmental officials are closely monitoring the construction of the Sabal Trail natural gas pipeline project after a leak beneath a shaft under the Withlacoochee River in Georgia released drilling fluids into the river.

The leak renewed concerns from environmental groups about the impact of the project that has triggered protests from opponents in three states.

Company officials said the leak did not cause any harm—but it added to the fears of activists. They are concerned that the pipeline could leak contaminants into the river and river water could be lost through cracks in the area's bedrock.

The pipeline, being built by Sabal Trail Transmission LLC, is a 515-mile interstate natural gas pipeline that will provide for the power generation needs of Florida Power & Light and Duke Energy of Florida by the end of June, 2017.

Those behind the project said the pipeline will bring additional affordable natural gas supplies to Florida and positively impact the economy in the southeastern states.

But environmental activists argue that the pipeline will threaten surface water quality, water supply resources and freshwater springs.

This fall, a contractor for the company told the Georgia Environmental Protection Division that material described as "drilling mud" appeared in the Withlacoochee River west of Valdosta, GA, while workers were drilling a pilot hole under the river.

The pipeline contractor e-mailed state environmental officials indicating that some kind of substance floated to the river's surface. Workers installed a surface water barrier to keep the substance from moving downstream.

Officials with Sabal Trail Transmission said there was never any danger to human health or safety, and no harm occurred to the environment.

But pipeline opponents said the leak should never have happened.

State regulators are inspecting the work as it progresses but add that so far, no prob-

PIPELINE
Continued on Page 16

Florida Specifier 2017 Drillers Directory

If your organization provides environmental or geotechnical drilling or direct push services, you're invited to complete and return the form below. Our annual directory will appear in the May issue. **There is a fee of \$100 to list your firm.** (The fee is waived for current *Florida Specifier* advertisers and FRC 2016 exhibitors.) Please type or LEGIBLY print the information requested and return as soon as possible to Mike Eastman via fax at (407) 671-7757, e-mail mreast@enviro-net.com or mail to P.O. Box 2175, Goldenrod, FL 32733. You can reach us by phone at (407) 671-7777. **If you were included in last year's directory, there is no need to complete this form—we will be in touch.** The deadline for submitting listings is **Wednesday, Apr. 5, 2017.**

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Sinkhole update:

Mosaic continues post-sinkhole activities at New Wales property

By ROY LAUGHLIN

As of mid-December, Mosaic Fertilizer and the Florida Department of Environmental Protection reported that over 1,200 private drinking water wells had been sampled in the vicinity of the company's New Wales plant where a massive sinkhole opened up in late August, completely draining a process wastewater impoundment.

DEP, in a daily progress notification, said that 1,160 of those wells are providing water that meets federal Clean Water Act standards.

An additional 70 wells "show no impacts from the process water from the Mosaic sinkhole, but do show some results above drinking water standards."

DEP and the Florida Department of Health are advising homeowners of measures they can take to improve their well's water quality.

As of Dec. 1, Mosaic had received a total of 1,395 requests for off-property well water sampling, and had sampled 1,329 of those wells.

Also as of that date and consistent with Mosaic-DEP consent order stipulations, the company now will limit further drinking water well testing to those within a four-mile radius of the sinkhole.

Nikki Foster, public affairs manager for Mosaic, in response to a query about private potable water wells that did not meet drinking water, provided additional details.

"In all cases but one, the wells demonstrated only one drinking water constituent out of eight analyzed in excess of standards," she said. "Gross alpha (radiation) and radium 226 +228 values constitute the

majority of the well results that did not meet drinking water standards. But these same samples met drinking water standards for sodium, fluoride and sulfate. These three parameters are indicators of process water lost in the sinkhole."

The single well with two constituents over standards, had exceedances in total dissolved solids and gross alpha radiation. All wells that had exceedances were in Polk and Hillsborough counties.

It is not uncommon for Florida wells to show high alpha levels from geological sources. Alpha radiation is the most common contaminant found above acceptable standards in Florida's groundwater sources used for potable supply.

The lack of a contaminant fingerprint that includes the three inorganic markers of the gypstack is the basis of the conclusion that off-property wells have not been contaminated by the sinkhole or gypstack wastes it swallowed, Foster explained.

Mosaic has completed the installation of four additional monitoring wells on its property.

As of mid-December, the company had 85 monitoring wells, in combination tapping all three aquifer systems below its New Wales property.

Mosaic increased monitoring well sam-

pling frequency, and its contractors and DEP officials continue to pull and analyze water samples.

The company is also installing two additional recovery wells near the sinkhole to augment the recovery provided by the single well that has been in operation since early December.

That well is averaging more than 3,500 gallons of groundwater recovered per minute.

DEP and Mosaic, in their public statements, insist that sampling shows that groundwater contamination has not spread beyond the boundaries of the New Wales facility.

Mosaic announced several other changes to its public outreach programs that have been operating since the sinkhole opened up.

The company has distributed bottled water to residents who requested it since the incident occurred. As of Dec. 1, water deliveries totaled 1,452 per day.

On that date, Mosaic discontinued bottled water deliveries to properties whose wells had been tested and analysis showed no water quality problems.

Mosaic will continue bottled water deliveries to the approximately 70 residences where testing showed that potable well

water did not meet Safe Drinking Water Act standards, even though contamination did not come from the New Wales sinkhole, according to company officials.

Water deliveries will continue through the end of the year, giving time for well users to take corrective actions.

Mosaic said that by Dec. 9, work pad and access ramp work was 80 and 95 percent complete, respectively, with completion expected by Dec. 20. This work is part of the sinkhole plugging process.

On Dec. 8, the company submitted its final corrective action and grouting plan, per their consent agreement.

Mosaic proposed to drill between 40 and 50 boreholes and pump high pressure grout through them to seal the base of the sinkhole.

Planned completion date for the grouting is before summer, 2017.

Mosaic Fertilizer officials, along with Polk County environmental officials, continue roughly biweekly face-to-face meetings in different communities throughout the county to field questions from residents, and describe the progress with remediation.

In the meantime, Mosaic continues to post daily updates on its website, giving information about post-sinkhole activities.

FIU announces new partnership with Rookery Bay Reserve

By BLANCHE HARDY, PG

Florida International University is expanding its scientific environmental research capabilities through the creation of a new venture with the Rookery Bay National Estuarine Research Reserve in Collier County.

The Rookery Bay Reserve is located at the northern end of Ten Thousand Islands on Florida's Gulf Coast.

It contains one of the few remaining undisturbed mangrove estuaries in North America and is managed by the Florida Department of Environmental Protection's Coastal Office in cooperation with the National Oceanic and Atmospheric Administration.

The reserve's mission is to provide a basis for informed coastal decisions through land management, restoration, research and education.

As part of the National Estuarine Research Reserve, FIU will be responsible for habitat mapping, and the monitoring and research of avian ecology, water quality and weather.

"We are very excited about our new partnership with Rookery Bay National Estuarine Research Reserve," said James Fourqurean, PhD, a professor with FIU's Department of Biological Sciences and Southeast Environmental Research Center Director, Marine Education and Research Initiative for the Florida Keys.

"The long-term goals of the partnership are to help apply the best new science to the management, education and outreach activities at RBNERR, as well as to provide a living laboratory to support the research and education goals of FIU."

FIU and Rookery Bay hope their unique educational and research partnership will enhance the environmental understanding necessary to manage the reserve's 110,000 acres.

As part of the program, nine joint reserve-FIU staff positions are slated to be

ROOKERY BAY
Continued on Page 16

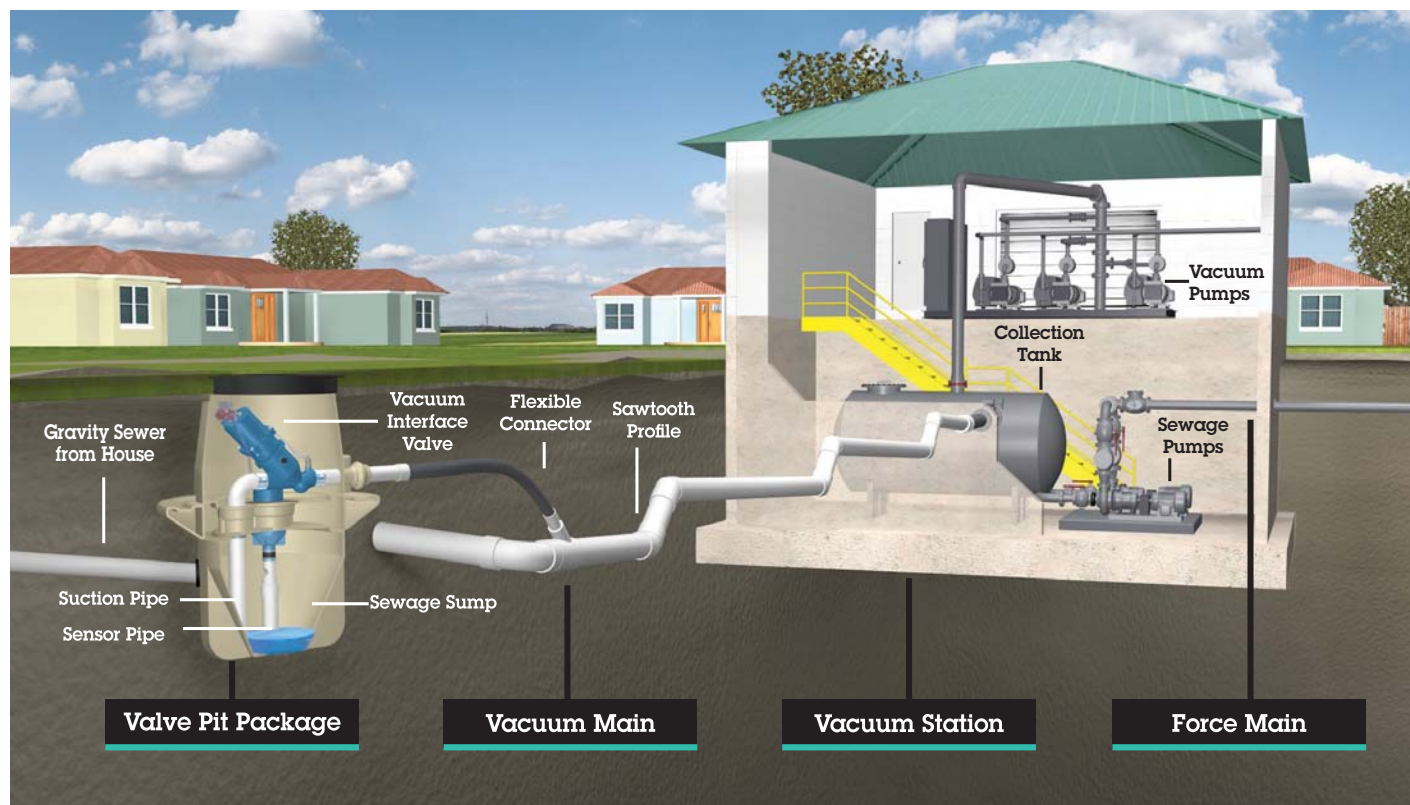


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Revisions to Chapter 62-780 expected to be finalized in January

By ROY LAUGHLIN

By the time this story is in print, the Florida Department of Environmental Protection will likely have completed its third round of revisions to Chapter 62-780, Florida Administrative Code. This rule guides risk-based corrective action during the remediation of contaminated sites.

The revisions regard multiple changes, including ten that Brian Dougherty, program administrator in the DEP Office of District and Business Support, characterized as his “top ten” during a presentation at the Florida Remediation Conference.

The rule now places an emphasis on preparation and use of conceptual site models, particularly in site assessment and site closure phases.

Incremental sampling methodology is defined in the rule, including specific stipulations for its use. ISM or discrete samples based upon the 95 percent upper confidence limit approach can now be used to evaluate both direct exposure and contaminant leachability. But acute toxicity comparisons must still be based on discrete soil sample analyses.

Alternate cleanup target levels that are based on chemical properties, rather than

exposure scenarios, can be used to delineate the extent of contamination. The current rule requires delineation to the Chapter 62-777 cleanup target levels regardless of how the alternative numbers are developed.

The hierarchy of information sources for toxicity values and other chemical-specific parameters has been largely removed from the rule (although IRIS and PPRTV are maintained as the top two sources of information). However, all of the information sources have been retained as “referenced guidelines” for use with the rule.

Probabilistic risk assessments must now use 90th percentile of the final exposure risk variability distribution. Identified sensitive life stages must be considered. The rule also sets requirements for uncertainty analysis if that analysis is used.

The revised 62-780 rule replaces “apportionment” with “dose additivity” where multiple contaminants contribute to a site’s human health risk.

Risk-based closures now have more options, including the use of non-recorded controls such as local ordinances.

Closure plans may now reference local government code, non-recorded institutional controls or deed restrictions. With engineering controls, it is necessary to specify who will be responsible for main-

taining them.

Sections 500 and 525 of the new rule were the longest and most extensive of the revisions in the most recent round. Section 500 addresses emergency response, while Section 525 deals with interim source removal. This split of the former section 500 now provides greater clarity for addressing emergency response incidents and more flexibility under the interim source removal section.

They include specific notification requirements that owners or responsible parties must follow and provide schedules for action. They widely apply to remediation activities at emergency incidents or typical contaminated sites.

Contaminant measurement and monitoring options increased following the revision. With proper correlation to lab analysis methods, field screening instruments are now acceptable.

The new rule broadens options for the frequency of monitoring and reporting. One year of fate and transport monitoring is no longer required. Model validation, however, is required for no further action closures that rely on a fate and transport model.

At sites under active remediation, greater flexibility in alternative sampling

frequencies that are “sufficient to evaluate the progress of the cleanup” are now acceptable. DEP will accept the results submitted in a single report even if the single report contains multiple sampling events.

Post active remediation monitoring can be shifted to natural attenuation monitoring. The surface water point of compliance has been revised in accordance with legislation passed in 2016 to allow demonstration that the surface water is not affected by the contamination rather than tying compliance exclusively to the groundwater immediately upgradient to the surface water.

Free product may be left in place under a conditional closure where it is not migrating and does not pose a risk to public health, public safety or the environment. Free product removal requirement decisions now include the stipulation of “cost-effective” as a factor in the determination.

Finally, rule revisions expand the types of cleanups to which organoleptic exemptions may apply. Organoleptic substances are those that affect the senses, including odor, taste or color (of water).

A list of substances to which organoleptic criteria and exemptions apply is available in the rule.

This is the third round of Chapter 62-780 revisions since the rule was finalized in 2005, with the revisions having occurred beginning in 2011.

An earlier revision streamlined Rule 62-780 to cover to all Florida’s remediation activities except for those involving radiological agents. Those include the Petroleum Restoration Program, the Brownfields Redevelopment Program and the Dry Cleaning Solvent Cleanup Program.

The new rule eases some of the prior notification requirements. Notifications to adjacent real property owners can now be made by a notice of contamination, with procedures described in the new rule.

To enlarge on notification, those requirements in the revised 62-780 were made well before DEP drafted their Emergency Notification Rule in November, 2016.

Dougherty further explained that the notifications in the rule have been in place since 2005 and focus more on long-term notification. Responsible parties, after a contaminant release, must now follow both the new Emergency Notification Rule and 62-780.

Probabilistic risk assessments are increasingly used to develop alternative contaminant target levels. They have been accepted in the rule since 2005, with significant changes in the 2014 rule revision.

In the 2016 revisions, slight edits to the language were made but it does not change the cleanup target levels that are in Chapter 62-777, noted Dougherty.

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Accepted by FDEP for In Situ Application

Impaired waterbody grants available

Staff report

The Florida Department of Environmental Protection is soliciting applications for two grant opportunities for projects to restore impaired waterbodies.

The Nonpoint Source Management Program administers grant money received from the U.S. EPA through Section 319 of the Clean Water Act. The application deadline for both Section 319 grant opportunities is March 15, 2017.

The Section 319 Nonpoint Source Grant solicitation is for proposals for up to \$6 million in water-quality restoration grants for projects that reduce or eliminate nonpoint source pollution.

The new Section 319 Nonpoint Source Education Grant solicitation is for proposals for up to \$1 million in funding for education and outreach projects that reduce nonpoint source pollution in adopted basin management action plan areas.

Solicitation guidance, application, eligibility criteria, instructions and evaluation criteria for each of these grant opportunities can be found at <http://www.dep.state.fl.us/water/nonpoint/319h.htm>.



Staff photo

Soil and groundwater industry professionals came together at lunch to celebrate FRC's 2016 charity, Second Harvest Food Bank of Central Florida. \$30,000 was raised for the food bank at the FRC Charity Golf Tournament in October and during the December conference, thanks to the generosity of conference participants.

DEP Petroleum Restoration Program poised to increase spending for remedial actions

By ROY LAUGHLIN

FRC's annual regulatory panel discussion has always been one of the best attended sessions of the two-day event. For years, the conference has provided a venue for information exchange and group discussion with Florida Department of Environmental Protection officials.

The department's Petroleum Restoration Program is important to Florida's remediation industry practitioners because the program manages thousands of contaminated sites involving cleanup contractors and their subs.

The PRP's reform effort got off to a slow start several years ago. But after several years of growing pains, the program is now closing sites at record rates, its information technology tools and processes are running more smoothly, and the program's funding remains at reasonable, predictable levels.

At FRC, Diane Pickett, PG, PRP administrator, outlined where the program stands and discussed several adjustments ahead that will increase the number of sites moving in to cleanup phases, an increase that will advance the program's goal of closing more sites and will benefit remediation industry professionals as well.

Pickett summarized PRP's recent accomplishment of achieving 417 site closures in the 2015-2016 program year—the most in program history.

So far this program year, 149 sites were added to its closed list, and the total is expected to reach 400 through June, 2017.

Pickett also noted that, in contrast to past years, "all the money is going out." PRP program administrators have worked through problems with approved state contractor qualifying processes, bidding, contractor selection, and electronic invoicing and payment.

She emphasized the need to balance spending in the program's different sub-phases and pointed out "that there is no correlation between spending and closure."

In a post-reform effort to reduce the list of remaining sites as quickly as possible, PRP has devoted most of its money to the site assessment phase and in a recently initiated effort, the Low Score Site Initiative.

The focus on increasing the number of site assessments worked as expected. Of 2,000 sites examined in the LSSI initiative, 500 were clean and closed without any remediation effort needed, Pickett said.

"The best way to get closure is to look at sites not looked at in 20 to 25 years," she said, because many are clean through natural attenuation. Some would never have needed remediation.

Site closure is PRP's primary goal, Pickett said, and she wants to do even better in the coming years.

She said that closure efforts are currently less effective than they should be because "the program has lost the communication link between owners and consultants."

She encouraged consultants to talk to owners more about their options under LSSI, and encourage them to make appropriate decisions that lead to quicker site closures.

By the numbers, as of Oct. 28, 2016, projects in PRP's different sub-phases

were as follows: 3,352 in site assessment; 1,273 in remediation activity/supplemental site assessment; 595 in remedial action planning; 97 in source removal; 90 in Remedial action construction; 216 in operations and maintenance; 257 in post active remediation monitoring; and 1,102 in natural attenuation monitoring.

Pickett cited numerous causes of and responses to PRP's skewed distribution among remediation sub-phases and the re-

duced number of projects receiving remedial actions.

Those causes include PRP's new processes and programs, new staff within both the industry and the PRP, driller saturation and time extensions that have slowed the advancement of work.

To move sites from assessment to remediation, she encouraged consultants and remediation practitioners to design fieldwork efficiently, particularly including


planning for drilling bottlenecks. She also asked for a focus on high priority sites that will need remedial action including interim source removal during the site assessment phase.

Consultants and technicians, she urged, should make proper use of submittals and change orders, particularly by incorporating "reasonably anticipated work," before a field event. "Agency term contractors


PRP
Continued on Page 15

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Scott Pruitt, Trump nominee to head EPA, lacks rudimentary technical background to do the job

A Florida Specifier opinion

President-elect Donald Trump named Scott Pruitt, currently Oklahoma's attorney general, as his nominee to head the U.S. Environmental Protection Agency. Pruitt's selection did not come as a big surprise to those of us hoping for the best but expecting the worst.

Pruitt's professional activities as an Oklahoma senator and that state's AG seem to be based on three principles: Devotion to big business and the political donors who own them, translation of fundamentalist Christian doctrine practiced by a minority into laws binding the majority, and rabid opposition to any federal law, rule or court decision that contradicts his personal positions pertaining to the first two.

In his biography on the state of Oklahoma's website, Pruitt takes credit for establishing Oklahoma's first federalism unit in the Office of Solicitor General whose stated purpose is to combat unwarranted regulation and overreach by the federal government.

As Oklahoma's AG since 2010, he initiated, joined or publicly supported lawsuits against most of the Obama administration's signature programs. He chose to opt out of the mortgage settlement rule with five mortgage lenders over illegal practices lending. The other forty-nine states were party to that settlement.

He brought the first lawsuit against the Affordable Care Act in 2013. Another of his 2013 suits sought to ban medical abortions by limiting or banning off-label use of drugs, a law successfully challenged as unconstitutional by a lower court, and affirmed unconstitutional by the U.S. Supreme Court.

He prominently criticized the Supreme Court for striking down the Defense of Marriage Act that extended equal protection to all married couples whether heterosexual or not.

His federalism unit sued the Obama administration over immigration policy, the Patient Protection and Affordable Care Act, and the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Although his criticisms of the federal government are not limited to the EPA, his autobiography highlights anti-EPA court cases. He describes himself as "a leading advocate against the EPA's activist agenda."

His LinkedIn biography claims that he "led the charge with repeated notices and subsequent lawsuits against the U.S. Environmental Protection Agency for their leadership's activist agenda and refusal to follow the law."

He sued the EPA to block its Clean Power Plan and Waters of the United States rule. He sued the EPA, opposing the Cross-State Air Pollution Rule on behalf of Oklahoma utilities. Except for the lawsuit challenging the Clean Power Plan, which is yet to be decided, Pruitt has been on the losing side of every EPA court challenge during his reign as Oklahoma's AG.

In addition to an unenviable record of minimal accomplishment as a lawyer, Pruitt will become head of Trump's EPA with the least credible technical or managerial experience of any EPA administrator since Richard Nixon established the agency by executive order in 1970.

Pruitt received his undergraduate degree from Georgetown College, the oldest Baptist College west of the Allegheny Mountains. He received a bachelors in communications and political science. He received a law degree from the University of Tulsa.

After leaving law school, Pruitt worked five years as a lawyer in a private Tulsa law firm. He was first elected to the Oklahoma Senate in 1998, a position that he held until 2006. While in the Senate, he ran unsuccessfully for other state offices, including races for the U.S. House of Representatives and Oklahoma's lieutenant governor.

He finally won a statewide race in 2010 when he was elected as the state's attorney general, and has served in

that position since.

Scott Pruitt, like many of his cohorts on the list of Trump nominees, brings with him a professional ethics record that is conspicuously mottled. In April, 2015, news outlets reported that Pruitt endorsed the constitutionality of distributing religious material to public school students, a practice courts have unambiguously ruled breaches the constitutional separation between church and state.

He delayed a referendum ballot on marijuana legalization using the ruse of rewriting the ballot title, a superfluous chore he failed to complete until after the deadline for the 2016 election passed. The delay means the measure will appear on the 2018 ballot rather than the 2016 election for which "Oklahomans for Health" met the signature requirement to qualify the referendum.

The Oklahoma Supreme Court blocked implementation of two anti-abortion measures until litigation to challenge them was concluded. In November, 2014, Pruitt's office stated its intention to ignore the court stay, and implement and enforce the laws anyway. Oklahoma's supreme court found those laws unconstitutional in December, 2016.

With respect to the most significant environmental issues under his purview at the EPA, Pruitt has knowingly and consistently mischaracterized the scientific consensus on climate change and global warming.

For example, a May 2016 opinion piece in the *National Review* included this highly inaccurate statement frequently used by climate deniers: "Scientists continue to disagree about the degree and extent of global warming and its connection to the actions of mankind."

In fact, scientists have developed an overwhelming consensus about the human causes of global warming and climate change. They continue research to reduce uncertainty in the predictions based on widely accepted hypotheses about mechanisms and factors influencing climate change. The largest uncertainty scientists have as a group is the potential risk to humans and the environment if nothing is done to reduce those risks.

Pruitt has consistently used his position as Oklahoma's AG to cheerlead on behalf of the fossil fuel industry. Pruitt jointly filed a lawsuit against federal regulation of methane emissions from drilling operations and more recently from transmission pipelines, joining a suit by Oklahoma Gas & Electric and an energy industry group.

In return, energy interests piled up campaign contributions instrumental in Pruitt's run to become chairman of the Republican Attorneys General Association.

A *New York Times* article alleged that Pruitt allowed energy industry lobbyists to use his office's letterhead to send form letters authored by energy industry lobbyists. The letters went to federal agencies during comment periods in an attempt to fraudulently influence federal rule development.

All this should be more than sufficient to demonstrate that Scott Pruitt, as EPA administrator, will bring to the agency what the *Washington Post* characterized as key

philosophical differences with the missions of the agency that he has been tapped to run.

Environmental organizations across the country responded in unison to the news of Pruitt's nomination with a level of alarm and angst never before seen following the naming of an EPA administrator nominee.

"The selection of Attorney General Pruitt, who has consistently questioned climate science and actively fought EPA's ability to reduce emissions, raises deeply troubling questions," said Sam Adams, director of the World Resources Institute U.S.

Bob Irvin, president of American Rivers, spoke directly in similar terms: "This appointment raises serious alarms for all Americans who value rivers and the clean water they provide ... We hope that senators will carefully scrutinize Mr. Pruitt's record on clean water, climate change and other environmental issues in deciding whether to confirm him to lead the EPA."

Natural Resources Defense Council President Rhea Smith criticized the selection in the bluntest terms: "The mission of the EPA and its administrator requires an absolute commitment to safeguard public health and protect our air, land, water and planet. That's the litmus test. By naming Pruitt, President-elect Trump has flunked ... If confirmed, Pruitt seems destined for the environmental hall of shame."

"We'll be fine with the environment," said Donald Trump in a 2015 interview with Fox News and reported by *Politico*. "We can leave a little bit, but you can't destroy businesses." Oh my.

Scott Pruitt, with his habitual, broad and consistent devotion to business owners and his abundant efforts to ensure their profits is marching in complete lockstep with Trump's philosophy.

"The greatest opportunity that we have heading into this new administration ... is to provide certainty to business industries across this country," Pruitt said during an interview with John Catsimatidis, a conservative radio host. Certainty to businesses, however, is not one of the sworn duties of the EPA administrator.

Lisa Garcia, vice president of litigation for healthy communities with EarthJustice, an organization with 100 lawyers trained and actively involved in environmental litigation cases, said in a *Washington Post* interview that the courts will be the citizenry's last line of defense if advocacy fails.

Garcia was unhesitant in her promise to litigate EPA rollbacks on environmental compliance or attacks on the environmental laws of the country. These laws require enforcement—it is the EPA's mission. And activists are ready for a fight.

These activists are likely to have their hands full for the next four years.

We can now only hope that the U.S. Senate will closely consider Pruitt's suitability to carry out the core duties of the agency and ultimately vote to send him back to Oklahoma.

Time running out to restore flow to Crystal River

By ROBERT KNIGHT, PHD

North Florida's nature photographer laureate, John Moran, said it best when he paraphrased author Mark Twain: "The mightiest river in Florida is the River of Denial that flows through Tallahassee."

Under tight control from the state's capital, the Southwest Florida Water Management District is telling us that the springs that feed Kings Bay and Crystal River on Florida's Nature Coast in Citrus County have more flow than they need to be healthy.

But I ask you: "When was the last time those springs looked healthy to you?"

When I first boated and swam at Tarpon Hole in 1977, the water was crystal clear. The bottom of the spring was visible in 65 feet of water. When the Florida Springs Institute completed the Kings Bay Phytoremediation Demonstration Project last year, we were lucky to see the bottom in areas with only six feet of water.

Not only is water clarity in Kings Bay almost entirely gone, so are the eelgrass and other native plants that historically covered the bottom of the bay. Those plants were the natural salad bar that supported large populations of game fish and manatees that are foundational for the region's tourism economy.

The Kings Bay aquatic ecosystem is not healthy. In fact, it is just one of many severely impaired water bodies in coastal Florida. Nutrients and salinity are on the rise and water clarity is in free fall.

The plant community is now dominated by algae, both free-floating planktonic and filamentous benthic species that cover the sediments. The noxious blue green alga,

Lynghya, regrows almost as fast as the Rotary Club can rake and haul it out of the bay.

Repeated efforts to dredge the benthic algae and to replant eelgrass at great public cost have failed due to rising salinity in the groundwater coming from the springs, as well as from Gulf storms. The Southwest Florida Water Management District has spent millions to fix Kings Bay's problems, yet the bay continues to degrade despite a plethora of additional plans and studies.

The latest insult to those who treasure Crystal River's springs is the district's draft plan to establish minimum flows. The 1972 Florida Water Resources Act required adoption of minimum flows for the 70+ springs feeding Kings Bay.

After 44 years of injurious delay and inaction, the water management district has somehow concluded that an additional 12 percent decline in flows at Kings Bay/Crystal River will not cause "significant harm." This claim, brought to you at great expense by district staff and paid consultants, rings as true as recent promises by presidential candidates.

The U.S. Geological Survey, the most respected hydrological agency in the world, reported that the average natural historic flows of the Kings Bay/Crystal River springs system were between 916 and 975 cubic feet per second.

More recent measurements document that the average spring flow during the past decade has plummeted to 389 cubic feet per second, a greater than 58 percent decline.

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Florida
Specifier

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The Florida Specifier welcomes columns, articles and letters to the editor on any subject or issue pertinent to the environmental, regulatory and technical areas the newspaper covers. We reserve the right to edit all submissions for newspaper style and publish submissions on a space-available basis only. The opinions expressed on this page are those of the authors.

Calendar

January

JAN. 7-8 – Exam: Backflow Prevention Recertification Exam, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 9-12 – Conference: Ninth International Conference on Remediation and Management of Contaminated Sediments, New Orleans, LA. Presented by Battelle. Call 1-800-2011 or visit www.battelle.org.

JAN. 9-13 – Course: Backflow Prevention Assembly Tester Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 9-13 – Course: Backflow Prevention Assembly Tester Training and Certification, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 13 – Conference: 26th Annual Southwest Florida Water Resources Conference, Fort Myers, FL. Presented by the American Water Resources Association Florida Chapter. Visit www.awraflorida.org.

JAN. 13-14 – Exam: Backflow Prevention Recertification Exam, Ft. Myers, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 14-15 – Exam: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 17-19 – Course: Microbiology of Activated Sludge, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 18-19 – Seminar: 3rd Annual Winter Water Seminar, Tallahassee, FL. Presented by the Florida Engineering Society, Florida Institute of Consulting Engineers, Florida Association of Professional Geologists, Florida Department of Environmental Protection and others. Call FES at (850) 224-7121 or visit www.fleng.org.

JAN. 18-20 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 20-28 – Course: Backflow Prevention Assembly Tester Training and Certification, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 23-25 – Course: Asbestos: Inspector, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

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This well-documented flow decline at the Kings Bay/Crystal River springs is validated by the concurrent reduction in water clarity caused by free-floating, planktonic algae. These microscopic plants have more time to multiply in a stagnant water environment resulting from drastically-reduced flows, and their growth is fueled by rising spring nutrients and saltwater intrusion.

The principal underlying cause of the observed flow decline, saltwater intrusion, and elevated nutrient concentrations at Kings Bay/Crystal River is excessive urban and agricultural development. The only way to reverse the algae problems and restore water clarity in Kings Bay is to dial back groundwater pumping and fertilizer use throughout the Southwest Florida Water Management District.

The Crystal River springs are silent. You must be their voice if you want to see them and the entire Kings Bay ecosystem restored to health. Let the district's governing board know that you do not support the proposed minimum flow for Kings Bay/Crystal River and that you adamantly oppose their decision to further reduce spring flows.

Tell the governing board members that you want Crystal River clear again, starting with a district-wide reduction of permitted groundwater pumping.

Remember Mark Twain's other famous words: "Whiskey is for drinking, water is for fighting over!"

Robert Knight, PhD, is Director of the Howard T. Odum Florida Springs Institute in High Springs.

JAN. 26-27 – Course: Asbestos: Management Planner, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

February

FEB. 2-3 – Exam: Backflow Prevention Recertification Exam, Destin, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

FEB. 3-11 – Course: Backflow Prevention Assembly Tester Training and Certification, Ft. Myers, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 4-5 – Exam: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 4-7 – Conference: National Association of Clean Water Agencies 2017 Winter Conference, Tampa, FL. Call (202) 833-2672 or visit www.nacwa.org.

FEB. 4-12 – Course: Backflow Prevention Assembly Tester Training and Certification, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 6-7 – Exam: Backflow Prevention Recertification Exam, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 6-9 – Course: Landfill Design and Construction, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

FEB. 6-10 – Course: Backflow Prevention Assembly Tester Training and Certification, Destin, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 7-9 – Course: Process Control of Waste Treatment Plants, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 7-10 – Course: Water Distribution Systems Operator Level 2 & 3 Training, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 7-10 – Conference: 2017 AWWA/WEF Utility Management Conference, Tampa, FL. Presented by the American Water Works Association and the Water Environmental Federation. Call (407) 957-8448 or visit www.fsawwa.org.

FEB. 8-10 – Conference: Florida Shore & Beach Preservation Association's National Conference on Beach Preservation Technology, Stuart, FL. Call (850) 906-9227 or visit www.fsbpa.com.

FEB. 8-10 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 14 – Course: Refresher Training for Experienced Solid Waste Operators - 8 hour, Daytona Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

FEB. 14 – Course: Refresher Training for Experienced Solid Waste Spotter, Daytona Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 14 – Course: Refresher Training for Experienced Solid Waste Operators - 4 hour, Daytona Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 14 – Course: Initial Training for Spotters at Landfills, C&D Sites and Transfer Stations - 8 hour, Daytona Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

FEB. 14-15 – Course: Initial Training for Transfer Station Operators and Materials Recovery Facilities - 16 hour, Daytona Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

FEB. 14-15 – Course: Refresher Training for Experienced Solid Waste Operators -16 hour, Daytona Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

FEB. 14-16 – Course: Initial Training for Operators of Landfills and Waste Processing Facilities, Daytona Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.



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FEDFILE

From Page 2

ing at any given time," according to an EPA press release.

Genetically modified skeeters in the Keys. Though novel genetic engineering has been demonstrated to reduce disease-transmitting mosquito populations, a plan to release genetically-altered mosquitoes in the Florida Keys has come under fire.

The Florida Keys Mosquito Control District and biotechnology company Oxitec spent much of 2016 planning a pilot study to release genetically-engineered male mosquitoes on Deer Haven, located on a small island near Big Pine Key.

The plan faced so much opposition from Deer Haven residents, that FKMCD included two non-binding referenda on the Nov. 8 ballot. The first asked Deer Haven residents specifically if they favored release; the second asked all Keys residents.

Deer Haven residents rejected the mosquito release, while 58 percent of Monroe

County voters approved it.

Genetically-modified male mosquitoes released to the environment have a few weeks to mate with and fertilize female mosquitoes before they die, passing on a gene for tetracycline dependency.

Because there is no natural tetracycline source, offspring mosquitoes with a gene for tetracycline-dependence received from a genetically-engineered father die before completing larval development.

Because the larvae never reach adulthood, spread of the tetracycline-dependent gene beyond the F1 generation does not occur.

In early August, the Food and Drug Administration released its environmental assessment including a finding of no significant impact. The FDA finding cleared the way for the mosquito release pilot study to proceed.

On Nov. 19, following the referendum, the FKMCD board approved a contract with Oxitec for the altered mosquito pilot project to continue, but not on Deer Ha-

ven.

Following the FKMCD's decision to proceed with the mosquito release pilot study, opponents notified FDA of their intent to bring a lawsuit unless it reversed its FONSI decision.

Opponents claimed that the FDA had not properly consulted with the U.S. Fish and Wildlife Service to obtain an opinion on the pilot study.

The lawsuit includes both local and international partners: the Center for Food Safety, Friends of the Earth, Foundation Earth, International Center for Technology Assessment, Florida Keys Environmental Coalition, and Food and Water Watch.

Opponents sent the notice of intent to file on Nov. 21. There is a 60-day period within which to file a lawsuit.

Annual report on lead enforcement.

During the last fiscal year, the EPA completed more than 123 federal enforcement actions associated with the health hazards of lead-based paint.

Lead paint and caulks are the primary human exposure route to lead for U.S. residents. Lead is a neurotoxin that causes impaired nervous system development. Human fetuses and young children are the most sensitive individuals.

The EPA is making a concerted effort to remove lead-containing materials from old buildings. Renovation has to be done using procedures that minimize human exposure to lead in dust and debris.

Highlights of the enforcement actions include a settlement with Sears Home Improvement Products Inc. The settlement resolved alleged violation of the lead rule for work performed by Sears contractors.

Sears agreed to conduct a comprehensive program to ensure that its contractors minimize lead dust from home renovation activities. Sears also paid a \$400,000 civil penalty.

In three other settlements, responsible parties agreed to fund voluntary environmental projects with a collective cost total of over \$400,000. The projects address lead risks and poisoning through lead-based paint abatement efforts.

Additional penalties of \$197,743 were also paid in the settlements for alleged violations.

The EPA categorizes settlements in terms of dollar amounts. No Florida company was listed in any work practice settlement category above the lowest amount, "\$10,000 or less."

But in the lowest category, Florida firms comprised 8 of 80 total cases. Florida firms were cited for rule infractions including failure to apply for initial firm certification; failure to provide copies of the EPA's lead hazard information pamphlet (several citations); failure to retain records; and failure to ensure that individuals performing renovations were either certified or trained by a certified renovator.

Jail time for biodiesel fraud. In early November, two Florida residents, Thomas Davanzo of Estero and Robert Fedyna of Naples, were sentenced in a multi-state scheme to generate and sell fraudulent biodiesel credits, and fraudulently claim tax credits.

The two pled guilty to the charges in late June this year. In November, both men received prison sentences lasting more than a decade, 121 and 135 months for

Davanzo and Fedyna, respectively.

In addition, the defendants will forfeit more than \$46 million in ill-gotten gains, including gold coins, jewelry and Rolex watches, thoroughbred horses, vehicles and properties.

The two men were convicted of operating several shell companies that purported to purchase renewable fuel on which credits had been claimed and which were ineligible for additional credits.

They then used a series of fraudulent transactions to transform the fuel back into feedstock needed for the production of renewable fuel, using two co-conspirator companies, Gen-X and Energy Group headquartered in Pasco, WA, and a subsidiary, Southern Resources and Commodities of Dublin, GA.

The defendants repeated this cycle several times.

The pair also faced charges for laundering the proceeds of the fraudulent scheme through several shell entities. They established bank accounts in the names of those shell entities and funds were cycled through the shell companies' bank accounts, perpetrating a fraud scheme and concealing its proceeds.

Gen-X and SRC were involved in additional sales of fraudulent credits and claimed additional tax credits that did not directly involve Davanzo or Fedyna. The total value of the fraudulent scheme may have been greater than \$66.5 million.

The EPA said that restitution paid by the two men ranks second in forfeiture penalties in a Renewable Fuel Sales/Renewable Identification Number fraud case.

WRDA passes. On Dec. 10, the Senate passed the Water Resources Development Act by vote of 78-21.

The Congressional Budget Office, in analyzing the original Senate version of this bill, estimated a total 2016-2025 cost of \$10.6 billion to fund about 25 projects in 17 states.

The bill authorizes spending nearly \$2.5 billion on water resource engineering projects in Florida.

The Central Everglades Planning Project, funded at \$1.9 billion, is Florida's crown jewel from this program.

When complete, it will move water from Lake Okeechobee to Everglades National Park and end most of the releases to the southern Indian River and through the Caloosahatchee River to tidewaters along the Gulf of Mexico.

Dredging Port Everglades' shipping channel, another major Florida project, is slated for \$337 million. The money will deepen the channel to 48 feet.

Another Everglades restoration project, the Picayune Strand Restoration Project, received an additional \$121 million to fund improvements and modifications of the original restoration effort, which began in 2007 in that region.


The total price tag for the Picayune Strand Restoration is now \$626 million.

Central Florida will get funding for two beach erosion projects.

The Flagler County Hurricane and Storm Damage Reduction project will receive \$31.6 million for beach renourishment along 2.6 miles along Flagler Beach.

The Daytona Beach Flood Protection project authorizes the U.S. Army Corps of Engineers to conduct a feasibility study for a flood protection project in that city.

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January 2017

Florida Specifier

SFWMD cautiously preparing for regional reservoir in Palm Beach County

By ROY LAUGHLIN

In early November, the South Florida Water Management District took its first steps to implement improvements to the C-51 Canal.

The canal changes involve flow and pumping capacity increases, a gated weir and culvert removal that will increase capacity.

On a yet-to-be-determined schedule, the modifications represent a useful prelude to the potential development of a huge reservoir project using rock mining pits currently being worked by Palm Beach Aggregates LLC.

That company has three aggregate quarries on approximately 2,200 acres west of Royal Palm Beach in western Palm Beach County.

As the quarries are mined to a depth of 30 feet, they become perfect candidates for a 20-billion-gallon reservoir complex.

The mined-out quarries hold water like a bathtub, an analogy that hyped a similar use of mined out aggregate pits that became the adjacent L-8 Reservoir.

The proposed reservoir project, called the C-51 Reservoir after the drainage canal that will serve as its primary water supply, will store runoff as a potable water source for utilities in Palm Beach and Broward counties.

The conversion of aggregate pits to reservoirs will occur on a sequential schedule.

The first one will be available in as few as two years. It will hold up to 16,000 acre-feet of water and could supply as much as 35 million gallons per day of raw potable

water.

The second pit is the jackpot of regional alternative potable water supplies—it could store up to 45,000 acre-feet and could be available within a decade.

The final pit could become available within a couple of decades and add even more storage to the 61,000 acre-feet of the first two reservoirs.

The reservoirs will store runoff that currently flows to Palm Beach tidewaters. In addition to increasing potable water supply, the reservoirs will reduce freshwater inflows to Lake Worth Lagoon, and provide more options for flood control and Everglades restoration.

Palm Beach Aggregates compares the benefits of the proposed reservoirs to the successful Loxahatchee Project and its L-8 Reservoir, also mined out aggregate pits.

Moving the reservoir from plan to finished project involves two as yet unresolved issues. The first is the creation of a private-public partnership. The plan is that the property with its aggregate pits will remain in private ownership of a yet-to-be-formed nonprofit entity established by Palm Beach Aggregates.

The water management district will construct and manage the reservoir. The district and Palm Beach Aggregates will enter into a long-term agreement for reservoir use.

SFWMD will need to make substantial property purchases. The cost of the similar L-8 Reservoir on adjacent property was \$189 million in 2003.

Local water utilities would pay for the water they withdraw from those reservoirs. News sources listed the cities of Sunrise,

nel-side and reference populations examined in the present study.

“Despite these coincident disturbances, analysis of tag coral colony conditions during the course of the dredging project shows significant and large effects in terms of severe coral tissue loss (almost five times) an increased risk of disease and death in the immediate vicinity of the dredged channel, in comparison with project-chosen reference reef.”

Even at the reference site, the 21 ± 3.5 percent mortality measured in the present study was greater than mortality observed in the 2010 baseline assessments, performed before dredging.

Within comparisons of the post-hoc study, mortality was seven times greater. Sediment smothering, allegedly resulting from the dredging, significantly increased the level of mortality, according to this new research.

The discussion also included a series of mitigation recommendations, one of which is to use feedback monitoring to guide adaptive management during future dredging operations, such as one in the planning stages at Port Everglades in Broward County.

Fort Lauderdale’s reef is part of the same reef tract as the one east of Miami.

The corps disputed the report’s conclusion, released in the draft report in May, that fugitive sediment smothering was the primary cause of coral mortality.

A corps spokesperson faulted the study for failing to distinguish between the types of sediments on the reef, and for using a limited coral mortality data set.

In response to a query, Susan Jackson, a Jacksonville District corps spokesperson, declined to make additional comments on the peer-reviewed version of the study.

“The comprehensive results of a joint study on the effects of deepening Miami Harbor will be available in 2017,” she said. “The study includes analyzing hundreds of hours of video, photos and documentation from more than 7,000 scientific dives.”

Those hoping for a simple statement linking coral deaths solely to sediment smothering will be disappointed with this report. But it does show that reef mortality was magnified by fugitive dredging sediments that occurred at a time when reef corals were already under stress from warm seas and disease.

Dania Beach and Lauderhill, plus Broward County, as public water supply utilities with the highest potential interest in the reservoir water.

The second issue is who will cover the capital costs. According to Palm Beach Aggregates estimates made in 2014, Phase 1 could cost up to \$146 million.

Phase 2 reservoir project costs were pegged at \$286 million, and involve a seven-year construction interval.

According to statements made by a district governing board member, the district has no money set aside to pay for the project. So local officials are looking to the Florida Legislature for \$97 million to help get the reservoir project moving.

The recent canal and control structure upgrades are seen by hopeful project sup-

porters as evidence of the Legislature’s willingness to increase funding as the project progresses.

Legislators asked the district to pare its list of eight candidate alternative regional water supply projects in half before further committing to any funding.

This project resembles the successful L-8 Reservoir project, a flow equalizer facility for runoff feeding a stormwater treatment area. In terms of technical metrics, the L-8 Reservoir is an effective engineering project.

The C-51 Reservoir project has a high likelihood of eventual completion. Its 20-billion-gallon capacity and delivery of up to 185 mgd of raw potable water would setup local utilities with more than half a century of alternative water supply.

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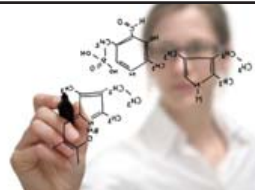
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treatment in aqueous media are demonstrated to effectively degrade PFOS.

Nutrients as contaminants subject to remediation efforts were either directly or peripherally addressed in several talks.

It remains to be seen whether future nutrient control efforts focus on best management practices or expand the boundaries of groundwater and surface water remediation efforts within established treat-

ment protocols.

In either case, some scientists and engineers are looking at the prospects of concerted efforts including both passive in-situ sampling, and containment and treatment that chemically modifies nitrogen and immobilizes phosphate.

Most of FRC's presentations fell within the technology development and application category.

Two components of successful projects were noticeable features across the majority of these talks: the development of conceptual site plans and the application of high-resolution monitoring.

Jim Langenbach, PE, BCEE, senior principal at Geosyntec Consultants in Titusville and new FRC chair, introduced these as essential components of an effective remediation effort because they established a game plan at the very beginning.

High resolution monitoring, although more expensive, is beneficial for initially focusing effort and subsequently ensuring that effort was well-placed.

At all stages of the process, comparison of high-resolution monitoring with the conceptual site plan may inform necessary changes to achieve desired remediation.

Information technology applications, covered in a Day Two session, is a key use of technology essential to project success.

Managing data in this context is not limited to collecting and visualizing instrument and sensor data. It includes both design verification programs and coordinating remediation efforts and tracking progress when a number of people are involved.

Kara Wimble, project manager with Ensafe Inc. in Jacksonville, illustrated the latter using readily available software and familiar office productivity programs at a former naval airfield in Jacksonville.

Rules and regulations are a third component of many environmental programs. Michael Goldstein, Esq., managing partner with The Goldstein Environmental Law firm in Miami, focuses his practice extensively on brownfield remediation projects and contractors' need to meet complex state and local compliance requirements.

Since 2008, substantial development by urban infill has made brownfield efforts more numerous and of larger size each year.

Consultants, Goldstein noted, can play a valuable role by preparing "quasi-regulatory documents at the front end (of a brownfield project) that locks in local and state codification."

He noted that even though potential pitfalls for consultants offering the services are real, "there are significant opportunities for consultants who understand brownfield programs."

FRC again featured its annual regulatory panel discussion, this year focusing on recent changes to Chapter 62-780, Florida Administrative Code.

Brian Dougherty, PE, program administrator in the Office of District and Business Support at the Florida Department of Environmental Protection, provided an overview of the rule's revisions, still in the approval process.

In addition, Wilbur Mayorga, PE, division chief of Miami-Dade County's Department of Environmental Resources Management, discussed the county's regulations for arsenic and chlorinated insecticide residues.

Miami-Dade has drafted the most ex-

tensive local government environmental regulations of any jurisdiction in Florida.

Mayorga presented an overview of some representative rules and supporting data that his department maintains and is available to consultants working on county projects.

Several officials of DEP's Petroleum Restoration Program joined the panel discussion again this year to discuss the progress of their program's legislatively mandated reforms begun three years ago.

After working through what many would characterize as a rocky reform transition, PRP Administrator Diane Pickett, PG, noted that the program is now functioning more smoothly and meeting objectives more broadly than at any time since its reorganization.

The program still needs some tweaks because, as she noted, there is not a strong correlation between program funding and site closure—which is not to say that closure efforts have been stymied.

Last year, the department set a record with 417 closures, primarily through the relatively low cost Low Scoring Site Initiative.

Out of 2,000 LSSI sites examined so far, Pickett noted, "500 were (found to be) clean and were closed."

Pickett's comments further addressed the need to move sites out of assessments and into cleanup.

At some point, high closure success using LSSI to identify the sites that do not need cleanup should slow significantly, leaving an increasingly high proportion of sites that need remedial action.

To achieve that, PRP staff has made some changes in the program's procedures to support moving sites to remedial action status. (See related story on Page 9.)

For the first time since its founding, the conference's chairmanship has passed to a new individual. Jim Langenbach replaces Nick Albergo, PE, DEE, senior engineer with GHD in Tampa, at the helm of the conference.

A new feature this year, speed talks, introduced a presentation format that provides speakers with just a few short minutes to highlight their topic and foster later discussion.

Langenbach noted after the conference that the speed talk format worked well.

"The speakers did a nice job of putting together condensed presentations and had clearly practiced in advance," he noted.

Langenbach said the conference is "likely to do this again" with a session for vendor/technology-focused speed talks. Adding a speed talk session to encourage university students and young professionals to present a project is also under consideration.

"Already looking ahead to next year, I think we are going to want to showcase the breadth of assessment and remediation work and technology developments in the state," said Langenbach. "This includes updates on technology advancements at the university level, field research projects, presentations by industry leaders, and a look at work within various market sectors."

Due to the success of this year's conference—held for the first time in December due to Hurricane Matthew—it is likely that FRC will be scheduled for roughly the same time in 2017.

Watch these pages in the coming months for announcement of the 23rd Annual FRC 2017 dates.

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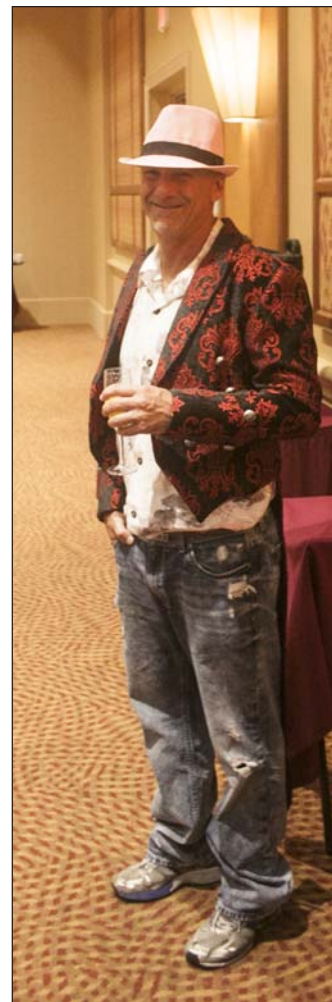
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Staff photo

Long-time FRC chairman and co-founder Nick Albergo passed the leadership baton to Jim Langenbach, highlighted by a mimosa toast during the opening session of this year's event,

As FL-GA water war trial ends, parties await special master's decision

By **BLANCHE HARDY, PG**

The Florida v. Georgia water war trial over the allocation of water from the Apalachicola-Chattahoochee-Flint river system concluded on Dec. 1 in Special Master Ralph Lancaster's home state of Maine.

The special master repeated the same message he has given the states from the beginning: "Finally, please settle this blasted thing," warning again there may be regrets on both sides.

Meanwhile, on Dec. 7, the U.S. Army Corps of Engineers announced that they would provide Georgia with 621 million gallons a day of water from the Chattahoochee River—28 mgd more than the corps and Georgia proposed in 2015, and 92 mgd less than Georgia asked for in 2013.

Georgia's withdrawals from the ACF system are the basis of Florida's lawsuit.

Georgia currently draws about 360 mgd total from the ACF—the main source of water for metropolitan Atlanta.

The corps will allow Atlanta to withdraw 379 million gallons per day from Lake Lanier and the Chattahoochee River for the city of Atlanta and Fulton, DeKalb

and Cobb counties.

Three additional Georgia counties are allocated a combined 242 million gallons per day from Lake Lanier, north of Atlanta.

The corps' decision was predicated by their update of the final Water Control Manual and final environmental impact statement for the ACF system.

Florida lawmakers are unhappy with the corps notice of intent to issue final updates.

"This week, Special Master Lancaster presided over the final week of testimony on the matter," they wrote in a letter to the corps on Dec. 2. "The outcome could significantly affect future management of the ACF."

"While the litigation is ongoing, we strongly urge you to refrain from any final decision and, in the interim, engage with relevant experts rather than completing a flawed EIS."

They made specific note of the corps' lack of consultation with the National Oceanographic and Atmospheric Administration before preparing to make a final determination. According to the legislators, NOAA has developed scientific tools that are better equipped to address drought and hydrology since the publication of the ACF FEIS draft.

The corps issued the final documents anyway.

The FEIS was published by the U.S. Environmental Protection Agency on Dec. 16, 2016, and the control manual was published in the Federal Register. Publication triggers a 30-day review period by state and federal agencies.

The corps expects to issue a record of decision with final approval and implementation of a Water Control Manual by March, 2017.

Both Florida and Georgia filed post-trial briefs with the special master on Dec. 15, 2016. At the request of the special master, the U.S. also filed an amicus curiae brief, a "friend of the court" brief, by an uninvolved but interested third party,

on Dec. 15, 2016.

The brief, addressing the issue of the corps' operations in the ACF River Basin, was authored by Ian Heath Gershengorn, acting solicitor general and other attorney and solicitor generals.

Neither the corps nor the state of Ala-

TRI-STATE
Continued on Page 16

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PRP

From Page 9

need to work with the system," she said.

Incomplete and incorrect submittals are an avoidable waste of time, she said. Cleanup outreach, particularly with a focus on the new Alternative Technology Cleanup Program, is an effort PRP will use to its advantage to balance site distribution among its subprograms.

During the second half of her FRC presentation, Pickett addressed a list of consultant-generated issues that come up frequently.

One of the first on her list was to unequivocally emphasize that the \$325,000 threshold for competitive bidding on remediation projects will not be changed.

She supported that decision by noting that 96 percent of remedial action construction and site rehabilitation projects are below that cost threshold.

There is no justification, she said, to increase the bidding threshold to remove a funding mechanism bottleneck.

In the past year, a significant but subtle change in the program now allows PRP to provide remediation assistance on closed sites.

The Florida Legislature amended Chapter 376, Florida Statutes, so that "eligibility continues after conditional no further action or LSSI closure if the department determines the actual or proposed circumstances of exposure change."

Pickett's presentation included discussion of additional items associated with the program.

Those included collaboration with the Florida Department of Transportation; changes to Chapter 376 associated with obtaining funding for post-closure institutional controls for funded cleanup sites; critical steps to meeting requirements for no further action with controls at a cleanup site; and the new Chapter 62-772.401 rule that allows a site owner to recommend an ATC if they agree to conditional closure.

Pickett gave a concerted plug for PRP's Innovative Technology Acceptance Program.

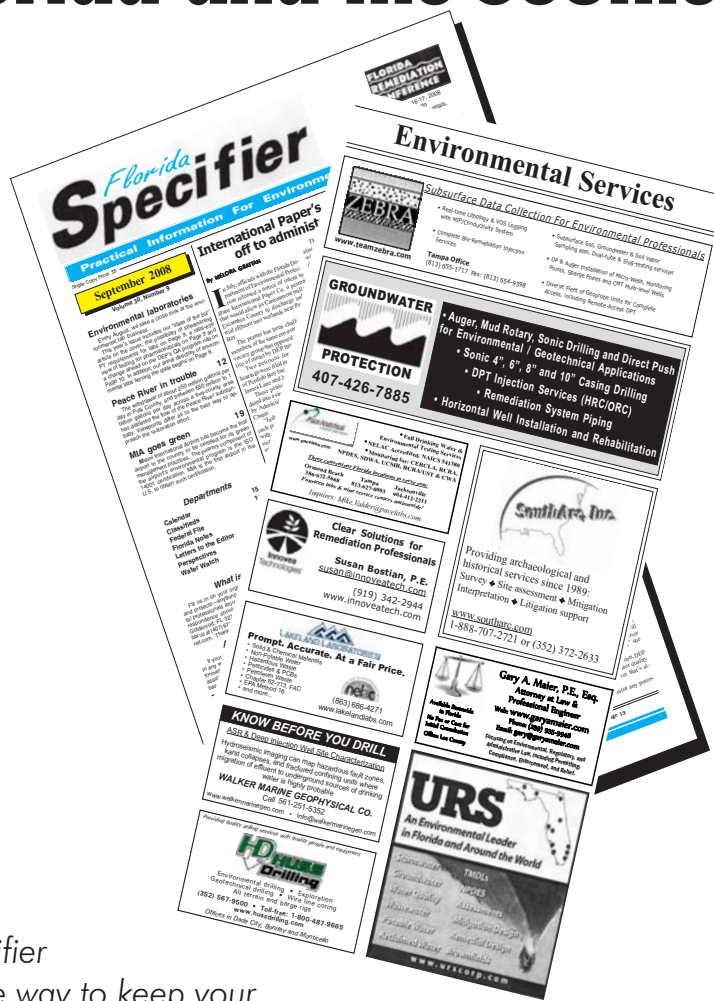
Potential compensation through this funding mechanism is potentially large. The program does not require co-payment from property owners or responsible parties.

The projects are awarded through competitive proposal review process, and payments are based on meeting cleanup milestones.

PRP's reform goals were to substantially increase site closures, lower remedial costs and use information technology and streamlined program procedures to lower overhead costs.

Some accomplishments in each are already evident this year, and prospects for more remedial activities in PRP's portfolio is expected in 2017.

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ROOKERY BAY

From Page 7

created for scientific research, education and resource management.

"Our initial partnership makes much of the RBNERR staff FIU employees, and our cooperative agreement outlines very generally how FIU and RBNERR can work together in the future to mutually enhance our management, research, education and outreach programs," Fourqurean said.

FIU plans to construct a joint research and educational support facility adjacent to the reserve's headquarters and a Rookery Bay Environmental Learning Center campus in Naples to house future programs.

The facility is intended to support ongoing research programs, attract new re-

search focuses and spur new educational opportunities for students in the local area.

"FIU will use RBNERR as a living laboratory for many of our graduate and undergraduate classes," Fourqurean said. "The first classes to take advantage of the new partnership have been our Ecology of South Florida and Invertebrate Ecology classes, but I am sure many more classes will soon be visiting the reserve to learn about the mangrove and estuarine environments of Southwest Florida."

The Rookery Bay National Estuarine Research Reserve currently offers seasonal research internships for sea turtle, beach-nesting bird and water-quality monitoring and communications internships. The reserve has plans to offer environmental edu-

cation internships in the future.

"RBNERR will also figure prominently in FIU's recently funded graduate training center funded by the National Science Foundation that aims to support graduate education and research into how pollutants move about and behave in the South

PIPELINE

From Page 6

lems have been found.

Dee Ann Miller, deputy press secretary for the Florida Department of Environmental Protection, said the department continues to exercise stringent oversight of permitted construction activities associated with the Sabal Trail pipeline.

DEP staff has been on-site at the construction location on the Santa Fe River multiple times for both routine compliance inspections and to follow up on resident's concerns.

DEP staff, along with officials with the

CANALS

From Page 1

Many of the canals are a potential source of contaminants to waterbodies designated by the state as Outstanding Florida Waters.

The interconnection of canals to near-shore waters and oceanographic interconnections where water quality benefits may be slower in arriving were discussed.

DEP officials have informed Monroe commissioners that a lack of action to protect nearshore waters could result in new restrictions on construction to limit additional pollution.

The cost to restore the canals with poor

NOTES

From Page 3

compliance, emergency response, and unmanned aerial system/drone photography and cinematography.

ACES-3 staff has over 50 years of experience providing environmental compliance services to federal, state and industrial clients throughout Florida.

Key personnel of the new firm include Vincent Flanagan, president; Brian Barfus, project manager; and Deborah Valin-Eden, project manager/environmental instructor.

Arizona-based Earthworks Environmental LLC opened a new office in Orlando. They will focus on stormwater including helping clients deal with runoff, pollution prevention, cleanups and construction permitting.

People news. Richard Carman has been hired as corporate director of environmental services by Universal Engineering Sciences Inc.

Universal is headquartered in Orlando and has 17 branch offices across Florida and Georgia.

Florida landscape," Fourqurean said.

The new venture will generate up to five internships per year. New internship positions may open up for other disciplines such as landscape architecture, engineering and environmental law, should the program generate a need for them.

Florida Fish and Wildlife Conservation Commission, have also been out by boat to conduct investigations on the Santa Fe upstream and downstream of construction to ensure that there are no turbidity issues or water quality violations.

During these inspections, staff observed no unauthorized discharges or wetland impacts—so far.

"The permittee was found to be operating in accordance with its permits and the provisions of its drill plan," Miller said.

The pipeline will run from Alabama, through Georgia and terminate in Central Florida.

water quality within the unincorporated portion of the county is estimated to be at least \$670 million.

To keep the county restoration program on track, the commissioners approved the use of a \$1.5 million commitment from a Florida Keys Stewardship Act allocation.

In addition, four additional projects are planned upon receipt of \$2 million from RESTORE Act funding available in 2017.

In the meantime, commissioners approved a resolution to move forward with six additional canal water quality restoration projects including four aeration projects that will move forward provided that long-term funding is available.

TRI-STATE

From Page 15

bama are included in the current Florida-Georgia lawsuit.

The amicus curiae brief includes the corps' history and responsibilities in controlling the ACF basin. It describes the current operating procedures under their 2012 Revised Interim Operating Plan referenced by both states during the trial and the proposed operations under the updated control manual.

It explains how the corps' operations would treat additional basin inflow under varying conditions and discusses the likely consequences for flow regimes in the ACF basin based on the timing and duration of substantial additional basin inflow.

The special master may have a recommendation on the case by year's end.

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