

Florida Specifier

FLORIDA 2017
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Call for Abstracts
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Practical Information For Environmental Professionals

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Focus on drillers 1,5,6,10

This month, we take a look at the state of the Florida drilling business and present our annual Drillers Directory. In addition, city of Clermont and St. Johns River WMD officials are drilling deep into the Lower Floridan in search of a viable alternative supply of drinking water.

Chicken plant lawsuit filed 7

Environment Florida filed suit under provisions of the Clean Water Act against Pilgrim's Pride. The company operates a hatchery and chicken packing plant in Live Oak that releases, on average, more than a million gallons of wastewater a day into the Suwannee River.

Matthew cleanup 8

Hurricane Matthew's passage last October left tons of debris along coastal lagoons and in the St. Johns River in eight Northeast Florida counties. The state spent over \$8 million on cleanup, then notified local governments that they were halting any further debris removal, leaving county officials scratching their heads.

Cape Coral reservoir 15

Cape Coral officials are working on a plan to purchase a mined-out aggregate quarry northeast of the city to store stormwater runoff during the rainy season and serve as a source for landscape irrigation water during the dry winter and spring months. The plan to purchase and convert the quarry has gained traction as the winter-spring drought continues to intensify.

Departments

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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 or email meast@enviro-net.com.

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Photo courtesy of Avatar Studios

Florida's drilling industry leads the Southeast U.S. through an active mix of remediation, water resource development, disposal wells and specialty geotechnical projects that all require skilled drilling. Shown above, GFA International drillers are providing verification wire line coring for a deep soil mix barrier wall on a levee rehabilitation project. Story below.

Florida drillers busy on wide range of projects

By ROY LAUGHLIN

Florida environmental and geotechnical drillers describe the current market for services as busy, offering a wide range of projects, reasonably profitable and continuing to recover since it bottomed out in 2013.

Notable improvements include a slightly higher pricing environment and an easier time finding qualified employees.

Optimism about the near-term future dominated their comments.

Range of opportunities

Environmental projects are a significant part of the drilling portfolio statewide. Projects include the installation of monitoring wells and large auger wells for source removal during remediation work; remediation agent injection, contaminated plume monitoring, capture and sometimes reinjection after treatment; and other specialized techniques.

While the Florida Department of Environmental Protection's Petroleum Restoration Program provides a number of drilling opportunities in Florida, it does not dominate the drilling portfolio.

Over the past several years, drilling for public water supply, deep disposal, and aquifer storage and recovery has become a key market for well drillers here.

The U.S. Environmental Protection Agency increased contributions for such projects for several years between 2013 and 2016.

In 2016 alone, EPA provided more than \$105 million to support such projects in Florida, including \$59 million to the DEP's State Revolving Fund, \$45 million to State Revolving Fund Capitalization, and \$1.74 million to sup-

port water infrastructure.

EPA contributions declined significantly this year when only State Revolving Fund Capitalization received EPA funding of \$32 million.

Florida's State Revolving Fund refers to three distinct low interest loan programs for drinking water, wastewater and stormwater infrastructure.

The fund reinvests its interest earnings and principal repayments on an annual basis, so the increases in capitalization will generate interest and loan repayments that can fund projects in the future.

Geotechnical infrastructure projects are another important niche, particularly in South Florida.

Large private real estate development projects as well as civil works

projects such as the Herbert Hoover Dike refurbishment have provided wireline coring and verification drilling work to several prominent drilling and consulting companies in South Florida.

In addition, brownfield projects, notably significant in Southeast Florida urban areas and Pinellas County, have significant remediation components.

Deep injection wells are another category in Florida's drillers' market. The work is dominated by the few contractors who have invested in the multimillion dollar rigs required for the work.

Dade County's large-diameter deep disposal wells are the most recent prominent installations to be completed, but others are being considered in South and Southwest Florida.

DRILL
Continued on Page 12

Daytona Beach implementing potable reuse pilot project

By BLANCHE HARDY, PG

In the middle of a desert in a remote corner of southern Africa, people have recycled wastewater into drinking water for 50 years.

Bill Gates drank wastewater processed into drinking water by a steam engine-powered device called the Omniprocessor.

The Orange County Water District surrounding Santa Ana, CA, is expanding production of its wastewater-to-drinking water system from 70 to 100 million gallons per day.

There, the processed wastewater is mixed with groundwater to supply over 70 percent of district's 2.4 million resi-

dents with potable water.

When necessary, people get over the stigma.

There are over 3,700 active wastewater facilities regulated by the Florida Department of Environmental Protection. Roughly 2,000 of them are classified as domestic wastewater plants.

Desalination to produce potable water has proven to be problematic, energy inefficient and expensive.

Eventually, more municipalities in Florida are going to take the plunge—and the city of Daytona Beach is one of the latest.

POTABLE
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Trump executive order reverses Obama administration decision on Keystone XL pipeline

Staff report

The Trump Administration issued a presidential permit for the construction of the Keystone XL pipeline.

Undersecretary of State Tom Shannon signed the presidential permit because former ExxonMobil executive and now Secretary of State Rex Tillerson recused himself from the permit process.

Shortly after his inauguration, Trump directed the U.S. Department of State to make a decision on the pipeline within 60 days.

This reverses a decision that President Obama made in 2015. Obama believed that the pipeline was not in the public interest and was not consistent with his administration's efforts to lead international climate change actions.

Pipeline opponents vowed continued opposition to the pipeline construction.

"This project has already been defeated, and it will be once again," said a spokesperson for the Sierra Club. "The project faces a long fight ahead in the states."

The next stage at which opponents may oppose the pipeline construction will be in Nebraska. That state's Public Service Commission must grant state approval for pipeline construction there.

Opinion polls of Nebraska residents since 2014 indicate more than half approve the pipeline crossing the state as long as it avoids the Sandhills Region and poses no risk to the Ogallala Aquifer.

The U.S. Army Corps of Engineers will also be granting permits if Nebraska state agencies approve the pipeline.

TransCanada Corp., sole owner of the pipeline, claims it owns 90 percent of pipeline's U.S. route.

How much of the pipeline's remaining 10 percent requires taking by eminent domain has not been disclosed. Taking by eminent domain could require at least a couple of years to complete.

Nationwide, only 38 percent of Americans support the pipeline construction, according to the most recent Quinnipiac University poll. Fifty-one percent oppose it, and the level of opposition has been rising.

The Keystone XL about-face was no surprise considering that Trump repeatedly promised to approve its construction if elected during the presidential campaign.

He justified it on the basis of American jobs and national energy security.

Trump promised that approval would be dependent on the use of American steel in the pipeline. But in early March, he abandoned his domestic steel content pledge, and granted TransCanada an exemption to use foreign steel in pipeline construction.

The economic viability of the water- and energy-intensive tar sands oil extraction remains the biggest production question for the project.

In addition, persistent low oil prices will play a significant role in whether the pipeline can provide many jobs or contribute substantially to American energy independence.



Pruitt reverses ban on pesticide residue.

In October of 2015, the U.S. Environmental Protection Agency proposed to ban all chlorpyrifos pesticide residues in food.

The proposed ban was in response to a 2007 petition from the Natural Resources Defense Council and the Pesticide Action

Network North America. The EPA's proposed ban called for zero chlorpyrifos residues in food, which would have ended its agricultural usage.

In announcing the reversal, EPA Administrator Scott Pruitt invoked the need to provide regulatory certainty to the thousands of American farms that rely on chlorpyrifos.

"By reversing the previous administration's steps to ban one of the most widely used pesticides in the world, we are returning to using sound science and decision-making rather than predetermined results," Pruitt said.

The U.S. Department of Agriculture supported Pruitt's decision, but not based on any science mentioned in its press release of support.

Habitual use is not the basis under law for an EPA decision to approve pesticide use. The Federal Insecticide, Fungicide and Rodenticide Act requires a chemical to be banned if any demonstration of adverse human health effects occurs.

In 2000, the EPA banned residential chlorpyrifos applications because of human health risk, especially to infants and children.

The EPA did not ban agricultural chlorpyrifos use, pending further studies.

Exposure to agricultural chemicals is usually much lower than exposure in households where the chemical is used because food is not eaten for days after it sprayed and thus exposures are much lower.

A Columbia University study of blood chlorpyrifos levels in mothers and neonatal infants was a critical one on which the EPA based its decision to issue a ban based on learning and memory deficits, particularly among farm workers and children exposed chlorpyrifos in water, fruit juices and other sources.

The study was controversial among some experts for its methodology, actively criticized by Dow Chemical, chlorpyrifos' manufacturer, and disdained by farming advocates.

In response, the EPA convened a FIFRA scientific advisory committee to review the scientific studies. The majority of experts on the SAP panel were not in favor of using the chlorpyrifos concentration in cord blood as a surrogate for the chlorpyrifos blood concentrations during the one- to two-year age.

The expert panel was concerned about the accuracy of the chlorpyrifos analyses of blood at low picogram per liter levels, and also noted that many blood samples analyzed were below the limits of detection. The lack of the study's replication further eroded the SAP's confidence in its findings.

EPA experts stated that "the panel agrees that both epidemiology and toxicology study suggests there is evidence for adverse health outcomes associated with chlorpyrifos exposures below levels that result in 10 percent red blood cell acetylcholinesterase inhibition (i.e. toxicity at lower doses)."

Otherwise, they expressed uncertainty regarding how to translate that into the proposed EPA rule.

With various qualifications, the report stated that the food exposure scenario suggested that almost 90 percent of the adult female population would always have blood chlorpyrifos concentrations above the proposed reference dose.

The expert panel wanted to see the Columbia study replicated, but largely did not contradict the issue of chlorpyrifos risk overall based on modeling its neurotoxicity and use of children as a sensitive group.

The EPA was under a court-ordered March 31 deadline to issue this decision in response to the 2007 petition. Attempts by environmental advocates to further challenge the EPA's actions may complicate matters.

Pruitt issued a final agency action when he reversed the proposed ban. Ordinarily,

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The 2017 FRC conference team is now identifying exciting and relevant talks for presentation at the 2017 conference and we would like to hear from you with abstracts on a variety of topics, including:

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- Brownfield assessment/remediation
- Innovative/creative site assessment strategies; technologies to develop effective conceptual site models
- Addressing the complex site challenge—assessment through remediation
- Combined and/or Phased Remedial Strategies
- Chlorinated solvents, NAPLs
- Emerging contaminants (1,4-dioxane, PFCs, pharmaceutical personal care products, etc.)
- Remedial system optimization
- PRP case studies: Assessment and remediation within the state PRP—tools and techniques for ATC success
- Assessment and remediation within the Florida Drycleaner Solvent Cleanup Program
- Vapor intrusion
- Vendor-focused technologies and products (anticipated to be a session with "speed talks")
- Regulatory policy and initiatives
- Cleanup case studies of sites and surface water contaminated with petroleum, PCBs, DNAPLs and LNAPLs, chlorinated solvents, arsenic and heavy metals, pesticides, nitrates/nitrites and other contaminants.

In addition, we are considering presenting several sessions featuring open forum discussion on technologies, site assessment techniques and regulatory subjects. If you have a suggestion for an open forum subject, chime in.

Please submit abstract of approximately 250 words by Aug. 15, 2017.

Presentations will range from five minutes to an anticipated maximum of 20 minutes in length. Please indicate the topic area your abstract is being submitted for (or provide your own) and your recommendation regarding length of the talk.

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FEDFILE
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Contributing writers and columnists

PRAKASH GANDHI
Senior Environmental Correspondent
Orlando, FL

BLANCHE HARDY, PG
Environmental Correspondent
Sanford, FL

ROY LAUGHLIN
Environmental Correspondent
Rockledge, FL

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Polk County composting firm ordered to stop collecting waste materials

Staff report

Polk County officials ordered BS Ranch and Farm Inc. to stop accepting new waste materials to convert into soil due to the continuing odor issues.

The cease and desist order came several months after local residents and business owners first complained about odors throughout eastern Lakeland.

The plant recycles human waste, out-of-date foods and mulch into soil to be sold to growers.

The Florida Department of Environmental Protection has cited the company five times for violating permit conditions.

The department reported that 25,000 tons of treated human waste has been transported to the 300-acre facility from dozens of wastewater treatment plants.

Company officials blame the odors on the nearby county landfill and other area businesses.

The county said the composting company needs to devise a plan to mitigate the odors before it can continue with normal operations.

Tampa tire recycler. State environmental officials are investigating a Tampa company for illegally running a tire recycling business.

After discovering the tire recycling business was running illegally in 2013, DEP ordered the company, Green Wizard Tire Recyclers LLC, to stop accepting tires until it obtained the proper permit.

The company received a permit in 2014, but could not resume operations until it submitted an approved certification of construction completion requirements.

Green Wizard continued to operate without submitting the required document.

An inspection found that Green Wizard had 487,000 tires on hand—many more than their permitted maximum.

Officials also found the company was storing loose tires outside rather than in tractor-trailers as required.

In June last year, DEP revoked the company's permit, ordered the company to begin removing its vast used tire stockpile and assessed \$9,000 in fines.

DEP said that Green Wizard did not remove all the tires and related waste materials, or pay the fines.

Lake Jesup phosphorous. Companies are competing for the job of cleaning up nutrient pollution in Seminole County's Lake Jesup.

Scientists have spent years trying to remove phosphorus from nearby Lake Apopka, using everything from chemicals to natural filters.

Now, Lake Jesup has been deemed even dirtier than Lake Apopka.

The state analyzed water quality in Lake Jesup and determined that phosphorus levels need to be cut in half.

Officials said it could take several more months to find an appropriate cleanup remedy for the polluted lake.

Lake Worth solar. The city of Lake Worth unveiled a new five-acre solar energy system the city said can generate enough clean energy to power more than 250 homes and reduce carbon emissions.

The solar array, which took less than a year to complete, is the final step in what city officials said will be a long-term investment in solar energy.

Lake Worth officials estimate the city could eventually produce 10 megawatts of solar energy at the site, a move they said would provide as much as 15 percent of the city's energy needs.

The site features three solar panel arrays with a total of 6,900 panels.

Officials said the savings that are generated every year will be used to cover the cost of the project.

The U.S. solar market added 14,626 megawatts of new solar photovoltaics last year, according to the Solar Energy Industries Association.

Conservation lands. State officials ap-

proved the acquisition of the 465-acre Silver Springs Sandhill site located adjacent to Coehadjoe Park in Ocala.

The site will be managed by Marion County's Parks and Recreation Department.

Officials are hoping to attract more visitors to Marion County while protecting environmental lands and parks for future generations.

The site is located less than a mile from the headsprings of Silver Springs and within the most vulnerable zone of the Marion County Aquifer Vulnerability Assessment model.

DEP district seeks award nominees. DEP's Southeast District launched a new Superior Excellence Distinction Award program to recognize an organization's exceptional achievements in environmental stewardship.

To be recognized, a group's accomplishments must ensure responsible use and protection of natural resources through conservation and sustainable practices.

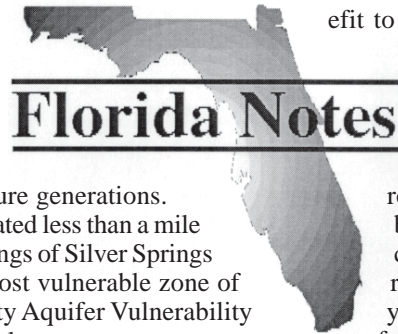
The program will recognize business, industries, trade associations, professional organizations, local government and non-private organizations in Southeast Florida for their achievements to reduce impacts on the environment beyond measures required by permit or rule.

To be considered, applicants must show achievements that provide a direct benefit to the environment in conserving resources, enhancing ecosystems and reducing environmental impacts.

Other criteria that will be considered include environmental management systems, best management practices and community education and outreach. Award nominations for this year must be received on or before May 15, 2017.

Company news. Bobby Sevet has launched Brook Ridge Consulting LLC, a niche environmental group that specializes in energy recovery, market management, beneficial reuse, and smart growth.

People news. Water Science Associates named Roger Copp as senior water resources modeler for the hydrogeological consulting firm.



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Bottled water company announces Sumter County plant construction

Staff report

SWR Properties LLC, doing business as Spring Water Resources, announced plans to begin construction of a drinking water pumping plant near Sumterville in Sumter County.

Last year, the Southwest Florida Water Management District approved a consumptive use permit allowing the company to withdraw 496,000 gallons per day from Fern Springs and another spring on SWR property.

SWR plans to build production wells, a pumping plant and facilities to fill tanker

trucks. Though the company has a 496,000 gallon daily permit, during peak months it could operate around the clock to pump as many as 892,000 gallons. That's enough to fill 144 tanker trucks.

According to local reports, Azure Water of Leesburg will be SWR's primary customer. Azure sells bottled water under several brand names.

In November, SWR installed four gauges and a monitoring well along Sumter County Road 470. The water monitoring equipment tracks water levels bi-weekly on SWR's 10.3-acre site.

One of the gauges measures water lev-

els in Beltons Millpond, which is not on SWR property.

Ralph Kerr, a senior professional geologist with the district's Water Use Permit Bureau who reviewed the permit application, said that SWR's water withdrawals could lower water levels in the pond.

A local citizen group, Protect Our Water, opposed the permit at the public hearing last June.

Local reports said that more than 400 permit opponents converged on a Sumter County Board of County Commissioners

meeting to oppose zoning, building permits and roadway improvements related to the pumping station.

The board also received more than 200 letters and emails in opposition to the pumping.

In one of the district's application documents, Hudson-based Andreyev Engineering noted that "this is a very good site for a spring water withdrawal project, utilizing a well drilled to public supply standards that is constructed near a flowing spring with excellent water quality, high spring flow rate and definite hydrogeologic connection between the spring and well."

The predicted impact at the nearest permitted well is less than 0.20 feet. The consulting firm said that, according to the impact model it used, the maximum predicted impact in the surficial aquifer is less than 0.40 feet.

When the district granted the permit, Protect Our Water applied for and received approval for a hearing to challenge permit approval through the state Division of Administrative Hearings.

But the group declined to proceed further when they learned that they could be responsible for payment of substantial attorney fees.

In March, Sumter County was placed under a Phase I water shortage because of the dry weather. SWR's permit will limit water withdrawals under drought conditions to 496,000 gallons per day.

Wahnetta water transmission upgrade. Polk County's Wahnetta Water System Inc. is upgrading its facilities and expanding its potable water system's transmission lines.

The project includes installation of about eight miles of new PVC water line. The project will replace asbestos cement water lines that were installed in 1963. Those pipes have become brittle, prone to failure and difficult to repair.

The project had an official Jan. 2, 2017, kickoff date. In early March, 30 to 40 percent of the project was finished. It is on schedule for completion in September.

The water system will provide water of better quality, feature better pressure throughout the transmission system, and at lower maintenance costs.

The rural system has 1,500 customers in a community of about 5,000 residents.

The project's cost is \$372 million. About \$177 million of that came from a federal grant allocated in the 2014 Farm Bill. The remainder, about \$195 billion, will be financed through a loan.

Aclus Engineering LLC of Orlando is the lead contractor for the project. ECON South of Lakeland, an engineering and surveying firm, is a partner on the project. Young's Construction of Melbourne is the construction contractor.

Dispersed water management project extended. The governing board of the South Florida Water Management District approved a one-year, \$542,836 contract extension with Evans Properties Inc. in St. Lucie County for continued operation of its dispersed water management site.

The 970-acre water farm draws from the C-24 Canal, diverting water from the

St. Lucie Estuary in Martin County.

The water farm was intended to retain up to 1.2 billion gallons of water annually. But during the prior two years, the farm retained more than that, approximately 1.5 billion gallons per year.

Holding water on dispersed water management sites prevents it from carrying excess nutrients into surface waters and tide-waters. The stored water may also serve

to recharge groundwater aquifers.

In St. Lucie County, C-24 and C-44 carry Lake Okeechobee releases into the St. Lucie River. Addi-

tional projects to manage excess water from Lake O flows are planned, but construction is not scheduled for about another five years.

Other farms that were part of the district's Dispersed Water Management Program over the past decade are also extending their contracts.

The Caulkins Citrus Co. land, originally 450 acres, impounded water from the C-44 Canal. It held about 8.3 billion gallons during 2014, almost double the planned 4.4 billion gallons.

Last year, the Florida Legislature increased payments to the site owners for the expanded capacity.

The cost of impounding water in water farms under contract to the DWMP costs about a third of a cent per gallon. Water management district officials have consistently praised the program for its effectiveness in removing nutrients at an affordable cost.

The land is leased, allowing for continued private ownership.

The control structures on the Evans Properties site cost about \$318,000 a couple of years ago and continue to be used. That makes the contract extension relatively cheap.

Critics of the program, however, are becoming increasingly vocal. Some see it as a form of corporate welfare because the price paid—typically between \$100 and \$300 per acre whether water is stored on the land or not—is higher than pasturing and hay production earns.

Critics also see dispersed water management as ineffective and insufficient.

In 2013 and 2016, Lake Okeechobee discharges to the St. Lucie Estuary were estimated to be 136 and 220 billion gallons, respectively.

The three dispersed water management sites, including the original Caulkins Citrus site, the Evans property and the Bull Hammock Ranch, retained a total of only about 9.5 billion gallons.

In the short term, DWMP sites are likely to be part of the flood control plans in at least the SFWMD and parts of the St. Johns River Water Management District.

Port Salerno septic to sewer. In early April, Martin County Utilities was in the final stages of testing a lift station and checking other operational details of a septic-to-sewer conversion near the intersection of Port Salerno Road and Dixie Highway in the community of Port Salerno.

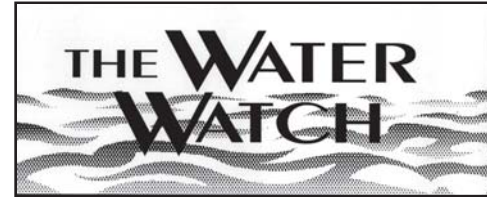
The conversions are being completed in an area about two blocks wide, west of the railroad and Dixie Highway Corridor.

"It is a small project in the scheme of things," said Phil Keathley, a senior project manager in the county's Utilities and Solid Waste Department.

The project is in one of several Martin County Community Redevelopment Areas. It had been on the books for several years but was delayed due to some "engineering issues," Keathley said.

With those issues now resolved and construction nearing completion, Port Salerno's septic-to-sewer project is scheduled for a ribbon cutting ceremony this month.

WATCH
Continued on Page 5





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WATCH
From Page 4

The project will reduce septic tank nutrient contributions to the St. Lucie Estuary and the Indian River Lagoon.

Muck dredging in Brevard. In March, the Florida Department of Environmental Protection provided an additional \$21.5 million for muck dredging projects.

The latest phase will underwrite muck dredging work on Merritt Island and in Satellite Beach. Both areas drain to the Banana River.

Fish kills in early 2016 occurred in several parts of the Banana River south of State Road 528.

Eventually, each project will cost around \$30 million and each will remove an estimated 600,000 cubic yards of muck.

Last November, Brevard County voters approved a 0.5 percent local option sales tax spanning the next 20 years that is expected to provide about \$300 million to underwrite a portion of the muck removal projects.

Neither of the dredging projects has started. The Merritt Island project may be underway in the fall. Still to be determined is where to stage the muck.

The Satellite Beach project requires a permit from the U.S. Army Corps of Engineers. That permit application awaits consultation from federal fisheries biologists that addresses potential impacts on marine life in the area dredged.

A couple of other projects are also in the works but not yet underway, including dredging at a Mims boat ramp, expected to cost less than \$3 million. That work also needs to locate a suitable spoil site.

The dredged muck will be analyzed for hydrocarbons, heavy metals and other contaminants of concern before it is discarded.

Recent dredging projects in the Brevard County segment of the Indian River Lagoon have not involved muck

with contamination exceeding state sediment standards.

Along with financial support for muck dredging, DEP also announced that it was providing funding to the county to identify sources of muck in the lagoon, and remove aquatic plants from the watershed that wind up as muck when they rot.

The Florida Institute of Technology's Indian River Lagoon Research Institute will receive \$1.5 million in state money as part of the muck studies.

The institute will monitor the effectiveness of muck dredging in restoring the IRL's robust ecology.

The dredging projects that have been completed and those that are still in the planning stages will remove some, but not all, of the estimated five to seven million cubic yards of muck in the Indian River Lagoon.

Editor's note: To follow-up an item in last month's issue, the city of St. Aug-

ustine's application for \$800,000 to help fund water infrastructure repair and upgrades in its Lincolnville neighborhood was not included in the first round of funding.

Martha Graham, the city's director of public works, said that the project may still receive some or all of the requested funding as remaining unspent balances free up.

That funding, if it should come through, could become available within the next few months.

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Company name / Contact information	EMR rate	Years in biz	Total staff / Staff in FL	Services / Capabilities	Hollow stem auger	Air/mud rotary	Dual rotary	Sonic	Direct push	Diamond coring	Cone penetration testing	1) Other services 2) Firm's specialty 3) Specialty business designations 4) Other equipment/tools 5) Areas served in Florida <small>Note: NA = No Answer</small>
Action Environmental 3007 N. 50th St. Tampa, FL 33619 (813) 909-0040 Fax: (813) 909-0042 Fred McKay, Drilling Division Manager fred.mckay@actn.com Tina Fritz, Business Development Rep. tina.fritz@actn.com • (813) 420-7524 www.actn.com	0.68	24	31/31	Geoprobe and drilling services including small diameter wells (1/2" - 1 1/2" dia.), conventional wells (2" and 4" dia.), injection wells, dewatering wells and dewatering system installation, directional borings, air sparge wells, SVE wells and well abandonment. Now providing LDA source removals.	■	■			■			1) Remediation product injections, soil stabilization 2) Direct push technology and injection services 3) NA 4) Geotech SPTs, large diameter auger deep source removals 5) Serves entire state
Ambient Technologies 4610 Central Ave. St. Petersburg, FL 33711 (727) 328-0268 Fax: (727) 328-2477 Carlos Lemos, President info@ambienttech.com www.ambienttech.com	0.7	24	32/23	Environmental & geotechnical drilling, (Florida and Central America); rock coring (Central America); concrete coring and drilling. Instrument installation in borehole, dewatering	■	■			■	■		1) Central America office in Panama 2) Excellent safety record 3) MBE, SDB, DBE 4) Utility locate capabilities and surveying 5) Serves Central Florida
American Vibracore Services Inc. 1215 Wallace Dr. Delray Beach, FL 33444 (561) 372-0500 Fax: (561) 372-0501 Fred Kaub, Chief Executive Officer info@americanvibracore.com www.americanvibracore.com	0.90	17	5/5	Vibracoring, geotechnical and environmental drilling, materials testing	■	■		■	■		■	1) Marine support services 2) Vibracore sampling: offshore, rivers, canals, swamps, lakes 3) SBE - State & Federal 4) Vibracore sampling 5) Serves entire state
Cascade Drilling Technical Services Mary Place, Business Development mplace@cascade-env.com (206) 472-0441 Tampa - Mike Early mearly@cascade-env.com Ocala - Mike Rice mrice@cascade-env.com www.cascade-env.com	0.69	26	1100/50	Cascade is the leading provider of environmental and infrastructure drilling, in-situ remediation applications, and high resolution site characterization technologies. Our collaborative approach, high quality service, reliable crews and leading safety program make us the first choice in environmental services. We are the only integrated nationwide contractor with expert technical capabilities and fleet licensed to work in all 50 states. With more than 1,000 employees and over 48 locations, Cascade integrates technology, safety, sustainability and human potential to tackle the challenging environmental and geotechnical issues facing our clients.	■	■		■	■	■	■	1) Waste handling/management 2) Sonic: smallest to full size; DPT: remedial injection, direct imaging, sampling; auger & rotary 3) Drilling and Remediation 4) Air/water knife, vacuum extraction 5) Serves entire state
Custom Drilling Services Inc. 100 Kid Ellis Rd. Mulberry, FL 33860 (863) 425-9600 Fax: (863) 425-9620 Michael Johnson, Vice President mdjohnson@customdrilling.net www.customdrilling.net	1.03	27	48/48	Environmental drilling: DPT services	■	■			■	■		1) Well abandonment, RC sand sampling 2) NA 3) NA 4) NA 5) Serves entire state

Environmental & Geotechnical Drillers serving Florida

2017 Directory

Company name / Contact information	EMR rate	Years in biz	Total staff / Staff in FL	Services / Capabilities	Equipment / Tools								1) Other services 2) Firm's specialty 3) Specialty business designations 4) Other equipment/tools 5) Areas served in Florida Note: NA = No Answer	
					Hollow stem auger	Air/mud rotary	Dual rotary	Sonic	Direct push	Diamond coring	Cone penetration testing			
Direct Push Services LLC PO Box 3998 Lake Wales, FL 33859 (863) 676-0088 Fax: (863) 223-8525 Scott Blackburn, General Manager scott@directpushcpt.com www.directpushcpt.com	NA	10	NA	Direct push/CPT testing, mud rotary drilling, environmental drilling	■	■				■	■			1) NA 2) CPT, limited access drilling 3) NA 4) NA 5) Serves entire state
Earth Tech Drilling 2703 NW 19th St. Pompano Beach, FL 33069 (954) 974-2424 Fax: (954) 974-2423 Bob Orlando, President borlando@earthtechdrilling.com www.earthtechdrilling.com	0.93	15	9/9	Environmental and geotechnical drilling	■	■	■	■	■	■				1) NA 2) Quality, safe environmental drilling 3) SBE 4) NA 5) Serves entire state
Environmental Drilling Service Inc. 4712 Old Winter Garden Rd. Orlando, FL 32811 (407) 295-3532 Fax: (407) 296-3957 Doug Leonhardt, President doug@edsenvironmental.com www.edsenvironmental.com	NA	28	12/12	Sonic, DPT, hollow stem auger, mud/air rotary drilling, sampling and well installation	■	■		■	■	■				1) We assist consultants and contractors with in-situ remediation using chemical injection, air/biosparge, vapor extraction point installation, pumping and mixing 2) NA 3) NA 4) NA 5) Serves entire state
Geologistics Inc. 750 E. Sample Rd., Bldg. 2, Suite 207 Pompano Beach, FL 33064 1-800-807-0165 Mary Kaub, President info@dbegeo.com www.dbegeo.com	0.70	8	5/5	Geotechnical and environmental drilling, CPT testing	■	■		■	■		■			1) Ground penetrating radar 2) CPT testing, environmental & sonic drilling 3) FDOT-DBE-Broward Co. SBE OSD - WBE Federal SBE 4) NA 5) Serves entire state
GFA International Inc. 1215 Wallace Dr. Delray Beach, FL 33444 (561) 347-0070 Fax: (561) 395-5805 Fred Kaub, President fkaub@teamgfa.com www.teamgfa.com	0.90	29	160/160	Geotechnical, environmental drilling, materials testing, inspections, code compliance and plan review, environmental assesments and remediation, asbestos and indoor air consulting	■	■		■	■	■	■			1) Heavy civil, transporation and infrastructure QC 2) Sonic drilling, wireline coring, borehole imaging, CPT testing, Geoprobe services, auto hammer precision, env. drilling 3) SBE - Federal, FL licenced well contractor 4) Sonic drilling, wireline coring, Geoprobe-Direct push 5) Serves entire state
Groundwater Protection 2300 Silver Star Rd. Orlando, FL 32804 (407) 426-7885 Fax: (407) 206-0856 Brian Shutts, Owner brian@drillprollc.com www.groundwaterprotection.com	0.69	31	32/32	Monitoring and remediation well installation; injection and well abandonment services; horizontal well installation. Auger, DPT, Sonic, angle drilling	■	■		■	■					1) Remediation systems, injection 2) Sonic, difficult access/low clearance angled wells 3) Certified small business, FL Water Well Contractor, NC/SC Water Well Contractor, Bonded in GA 4) Well abandonment 5) Serves entire state and Southeast U.S.
Huss Drilling Inc. 35920 State Road 52 Dade City, FL 33525 (352) 567-9500 Fax: (352) 567-6646 Ben Huss, Owner rbhuss@hussdrilling.com www.hussdrilling.com	0.74	27	24/24	Environmental, geotechnical, exploration deep wire line coring and water resource drilling services	■	■		■	■	■				1) Well rehabilitation 2) Environmental, geotechnical and exploration drilling 3) NA 4) ATV rigs, truck mtd. and track mtd. 5) Serves Central, NE and NW Florida
JAEE Environmental Services Inc. 3010 Peachtree Cir. Davie, FL 33328 (954) 476-8333 Fax: (954) 476-8347 Willie Smitherman, President jaee@bellsouth.net www.jaeeenv.com	0.96	26	14/14	Soil and groundwater sampling, installation of monitoring wells, well abandonment, bioremediation injection	■					■				1) Bio-injecting, well abandonment 2) Sampling using Geoprobe equipment 3) Water well contractor 4) NA 5) Serves entire state
National Env. Technology Inc. 12435 Jess Walden Rd. Dover, FL 33527 (813) 655-3612 Fax: (813) 655-3652 Ross Chinander, President netross@tampabay.rr.com www.netdrilling.com	0.88	24	6/6	Environmental and geotechnical drilling, and direct push services	■	■				■				1) NA 2) Geotechnical and environmental drilling and dewateringservoces 3) NA 4) NA 5) Serves entire state
Preferred Drilling Solutions Inc. 11747 87th St. N. Largo, FL 33773 (727) 561-7477 Fax: (727) 561-9028 Chad Campbell, President chad@pdsflorida.com www.pdsflorida.com	0.81	15	45/45	Environmental drilling, direct push and remediation services. Statewide service with three locations in Florida	■	■				■				1) Remediation services 2) Environmental services provider with focus on safety, quality and service 3) NA 4) NA 5) Serves entire state
Singley Env. & Remediation 6741 Pine Forest Rd. Pensacola, FL 32526 (850) 944-7799 Fax: (850) 944-0704 Michael Newman, Operations Manager pensacola@singleycc.com www.singleycc.com	NA	45	NA/NA	Environmental drilling for site assessments and remediation	■	■				■				1) Excavation, remediation system installation, chemical injection 2) Direct push technology, well installations and remediation services 3) NA 4) NA 5) Serves NE and NW Florida
Terracon Consultants Inc. 1675 Lee Rd. Winter Park, FL 32789 (407) 740-6110 Fax: (407) 740-6112 Erik Bluemke, Drilling Department Manager erik.bluemke@terracon.com www.terracon.com	.71	52	3,869/289	Terracon is a 100 percent employee owned consulting engineering firm providing multidiscipline services in environmental, geotechnical, construction materials testing and facilities architecture	■	■			■	■	■			1) Solid-stem augers, hollow-stem augers, odex, rock coring (NQ, HQ and PQ), rotary (air, mud, wash), casing advance (N&H) and down-hole hammer 2) Conventional field drilling and sampling methods as well as in-situ testing methods combined with geophysical investigations 3) NA 4) NA 5) Serves entire state from 11 offices
Universal Engineering Sciences Inc. 3532 Maggie Blvd. Orlando, FL 32811 (407) 423-0504 Fax: (407) 423-3106 Erin Kleinfelt, Marketing Manager (321) 696-2215 ekleinfelt@universalengineering.com www.universalengineering.com	.84	53	480/465	Drilling, engineering design & consulting, code compliance plan review & inspection, materials testing/quality assurance, site assessment & remediation	■					■	■			1) Haz materials assessment & remediation, sinkhole assessment & remediation 2) Geotechnical engineering & testing, soil borings, monitor wells 3) NA 4) Drilling crews are 40-hour HAZWOPER trained 5) Serves entire state from 15 offices

Environment Florida files suit against chicken packing plant

By ROY LAUGHLIN

In early March, Environment Florida filed a lawsuit under provisions of the Clean Water Act against Pilgrim's Pride. The company operates a hatchery and a chicken packing plant in Live Oak.

The operation includes a wastewater treatment plant that releases, on average, more than a million gallons of wastewater a day into the Suwannee River.

Florida Environment's citizen enforcement lawsuit, filed on behalf of its members, alleged that monitoring results show that Pilgrim's Pride's effluent did not comply with its National Pollutant Discharge Elimination System permit during 1,377 consecutive days.

It was out of compliance for one or more of the following: effluent toxicity, conductivity, total nitrogen and carbonaceous biological oxygen demand.

The lawsuit, filed in federal court in Jacksonville, asked the court to order the company to implement measures to remedy, mitigate or offset environmental harm resulting from violations of the Clean Water Act and its permit requirements.

It also asked for civil penalties and to be awarded the plaintiff's costs of litigation.

Pilgrim's Pride has a history of NPDES permit compliance shortfalls, all resulting from self-reported monitoring.

Dee Ann Miller, a spokesperson with the Florida Department of Environmental Protection, said that Pilgrim's Pride paid \$36,000 in penalties in 2011 and implemented changes to meet its NPDES effluent standards at that time. Those issues arose as part of its 2010 permit.

Environment Florida's lawsuit alleged that effluent toxicity thresholds were below the 100 percent permitted levels at least 25 times between 2013 and 2016.

The most recent test results indicated out-of-compliance toxicity in diluted effluent in November last year.

Through 2016, DEP was working with the plant under a 2015 consent agreement to bring their whole effluent toxicity into compliance with NPDES permit standards.

Stephen James, southeast director of environmental engineering for Pilgrim's Pride, indicated in a letter to DEP that the company could not fully account for the chronic toxicity that exceeded its permit requirements.

He suggested that an increase in antimicrobial treatment at multiple locations in the plant could have been a cause of the effluent toxicity.

By December, 2016, the plant was back in compliance with its permit for effluent toxicity, according to DEP's Miller.

The plant also exceeded its effluent permit standard for conductivity. Plant operators measure conductivity weekly. Conductivity is a surrogate for salinity.

Conductivity exceeded the permitted level at least a dozen times between 2012 and 2016. The highest level occurred in January, 2012, and since then the reported violations show varying exceedence levels.

James, in correspondence with DEP cited by Environment Florida, characterized specific conductivity exceedences as episodic, offering no reason for the cause.

Pilgrim's Pride's processing plant also has NPDES permit limits for nitrogen based on annual mass loading, a tally of total annual releases. The permitted AML is 114,245 pounds of total nitrogen.

AML values are calculated and reported monthly under the plant's 2015 NPDES permit. For the 12 months from December, 2015, through November, 2016, inclusive, the plant's reported AML of 118,260 pounds exceeded its annual AML limit, according to the Environment Florida filing.

Pilgrim's Pride's permit guidelines for carbonaceous biological oxygen demand impose multiple standards: a maximum for a single sample of effluent, a maximum daily limit in pounds and a monthly aver-

age concentration.

The monthly average, perhaps the most important, is 18 milligrams per liter. There were multiple violations of these limits in the spring of 2016, and again in January, 2017.

As a result of the recent failure to meet NPDES permit effluent standards, DEP has again been working closely with plant operators, attempting to bring the plant back into compliance.

"Because the facility did not meet the compliance deadline required by the consent order and to address additional violations, the department is taking additional enforcement action and is finalizing a more stringent consent order with the facility," said Miller. "This will require Pilgrim's Pride to develop and implement a more robust compliance plan as well as levy additional penalties.

"The department continues to communicate with Pilgrim's Pride regarding additional corrective actions the facility can

take to achieve compliance."

In a letter to Florida Environment's lawyers at the National Environmental Law Center, an attorney for Pilgrim's Pride stated that damaged denitrifying filters might have been the cause for excess nitrogen in the facility's effluent, and further assessment of the denitrifying system during spring 2017 was underway.

Pilgrim's Pride is an important local employer at its Live Oak plant. It is privately owned by a Brazilian conglomerate, JBS SA. Worldwide, the company sells about 10 billion pounds of chicken annually. It has production facilities in 13 states and Puerto Rico.

Environment Florida filed the initial lawsuit represented by Heather Govern, an attorney with the National Environmental Law Center in Washington, D.C.

The Sierra Club filed formal notice of intent to join the lawsuit as a co-plaintiff. It can join the suit after the 60-day period required by the Clean Water Act.

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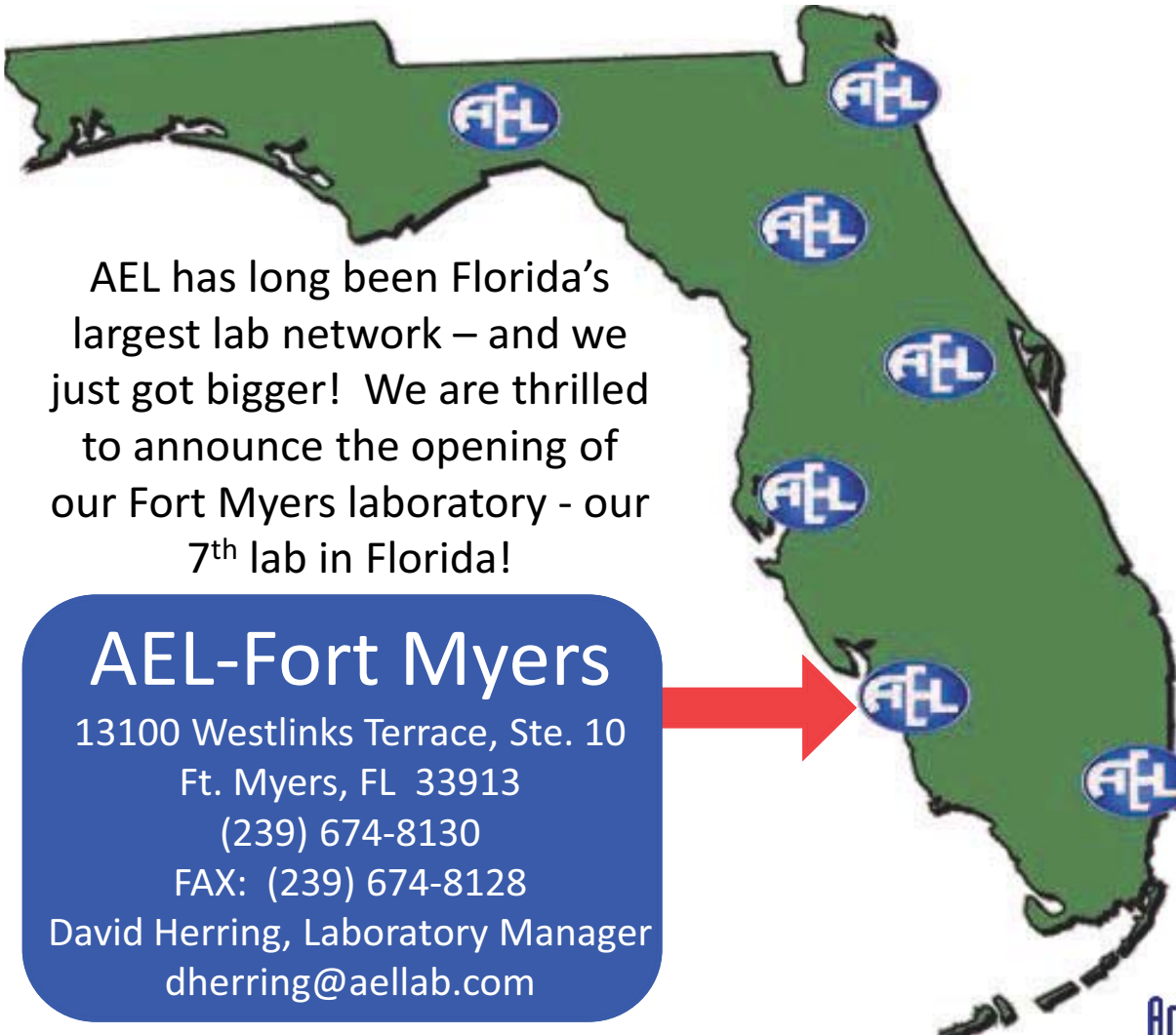
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U.S. infrastructure receives failing grades on ASCE quadrennial report card, again

By ROY LAUGHLIN

Every four years, the American Society of Civil Engineers surveys the condition of U.S. infrastructure and presents the results in a report card format.

This year, U.S. infrastructure earned a D+ grade—the same grade on the report card from four years ago.

The survey grades the condition of airports, bridges, dams, levees drinking water plants, wastewater plants, energy systems, hazardous waste facilities, inland waterways, ports, public parks, rails, schools, solid waste facilities and public transit systems.

In the D plus or minus category are aviation, dams, drinking water and wastewater plants, energy systems, hazardous waste facilities, inland waterways, levees, public parks, roads, schools and transit systems.

Bridges, ports and solid waste infrastructure earned C grades. Railroads alone received a grade of B.

With these grades, public infrastructure could justifiably have some self-esteem issues.

Airports get poor grades due to congestion issues. The report notes that 24 of the 30 major airports “may soon experi-

ence the Thanksgiving peak traffic volumes at least once every week.”

Bridges received a C+ grade, however four of 10 are older than 50 years. Just over nine percent of those over 50 years are structurally deficient.

Public schools, colleges and universities have a \$38 billion annual gap in building and maintenance needs.

The report said that the country’s 926 ports, responsible for \$4.6 trillion in economic activity, are expanding to service larger ships. However, the freight network that connects ports with landside distribution needs work.

Railroads received a B grade, the best grade awarded in this latest report card. The report pointedly noted that freight railroads are privately owned and their owners continue to make significant capital investments—27.1 billion in 2015.

Passenger rail lines, on the other hand, face the dual problems of aging infrastructure and insufficient funding.

Some of the public infrastructure grades are hard to understand. Wastewater treatment got a D+, while the report noted that “years of treatment plant upgrades and more stringent federal and state regulations have significantly reduced un-

treated releases and improved water quality nationwide.”

The report writers acknowledged the need for almost \$300 billion to meet an anticipated additional 56 million new connections in the next 20 years, treat solid waste to produce biogas, and increase reuse water distribution systems.

Also hard to understand in these grades is how future needs would earn these three categories a low grade when they are now successfully meeting their obligations and have all but the assured funding to continue.

Solid waste, another graded category had a similar assessment, but it got a C+ grade.

Drinking water systems maintain more than a million miles of pipes nationwide, and at least some portions of most large municipal systems are over 100 years old.

In aggregate, more than 240,000 water main breaks each year are estimated to waste two trillion gallons of treated drinking water.

The cost to meet stringent treatment standards and repair aging distribution systems could cost \$1 trillion over the next 25 years.

Energy, including electricity, gas and

their transmission systems, earned a D+, primarily because they are over 50 years old and much of the electricity transmission grid is operating at capacity.

The industry also faces additional environmental and security regulations.

ASCE’s report card also grades by state. Florida’s overall grade is C. That’s a bit better than the D+ nationwide, even though Florida residents have reasons to expect a better grade.

The subcategory grades make it seem that Florida’s overall grade could be better.

Here, coastal areas, ports, schools and stormwater are about at the national average with D grades. Drinking water gets a C+, and roads, transit and wastewater all get C grades. Energy gets a C-. Aviation, bridges and ports get B plus or minus grades.

Stormwater received a D- because the average stormwater utility payment in Florida is \$5.68 per month, and that’s not going to be enough to meet the \$1.1 billion capital upkeep costs through 2019.

At the other extreme, Florida airports received a B-, a pretty good grade in comparison to others. But the report noted that Florida’s airports are expected to need \$1.1 billion, about 70 percent more than available state funds.

Some of those funds are needed to improve road access, and multi-modal connections.

Perhaps Florida earned its C overall because state and local governments appear to be numb to the need to raise state and local taxes to fully fund infrastructure construction and maintenance to meet the expected population growth.

Deltona expands reclaim water system

By PRAKASH GANDHI

Officials in one of Central Florida’s fast-growing cities are taking steps to protect groundwater supplies as their community grapples with a growing thirst for the resource.

The city of Deltona in western Volusia County is moving forward with reclaimed water projects that will help reduce the demand on potable water supplies.

Besides protecting available groundwater resources, the reclaimed water will be returned to the watershed by way of recharge zones scattered throughout the city, according to city officials.

City Spokesperson Lee Lopez said they are installing new equipment that will treat stormwater to reclaimed water standards to provide more capacity to the existing reclaimed water system.

Once the improvements are completed, the facility will be able to treat up to four million gallons a day.

“The city of Deltona, as with other municipalities, continually explores new initiatives to protect Florida’s water resources by finding alternative methods for residents and businesses to access reclaimed water,” said Deltona Mayor John Masiarczyk, Sr.

“These other sources for nonpotable water lessen the impact on the current and future availability of our drinking water supply,” he said.

Lopez said they are getting help with funding for the work.

The city entered into a cost-share agreement with the St. Johns River Water Management District for the construction phase of the first project, with the district pledging \$1.875 million.

The Florida Department of Environmental Protection is also providing an additional \$1.875 million through the state’s Springs Protection Grant Program.

The city has made a substantial investment in its reclaimed water system for pipelines, rapid infiltration basins, storage tanks and high service pumps.

DELTONA
Continued on Page 16



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NE Florida counties wrestle with hurricane debris removal after state abruptly cuts off funding

By ROY LAUGHLIN

Hurricane Matthew's damage along Florida's East Coast could have been orders of magnitude worse if it had passed just 50 miles further west of its actual course.

Nevertheless, the storm's passage left tons of tree, construction and demolition debris along coastal lagoons and in the lower St. Johns River.

The debris includes watercraft, and parts of docks, boat houses, retaining walls and structures damaged by the wind and waves.

Eight Northeast Florida counties experienced the brunt of Hurricane Matthew's damage, from Brevard County to the Georgia state line, including Clay and Putnam counties.

The state of Florida, through the Florida Department of Environmental Protection, is responsible for cleaning up storm debris on state sovereign lands, including rivers and lagoons.

The department hired Alabama-based Crowder Gulf, a disaster recovery and debris management company, to survey the debris and create a GIS database of its location.

Additionally, CDR Maguire Inc., Tetra Tech Inc. and Eisman & Russo Inc. were hired to monitor the cleanup per Federal Emergency Management Agency requirements for reimbursement, according to Jason Mahon, a public information specialist with DEP.

Their survey resulted in a \$40 million estimate for removing all the debris and derelict vessels from state waterways. In the St. Johns River, downed trees and what was left of boat docks were significant debris components.

The state spent about \$8.5 million before abruptly notifying local governments that they were halting further debris removal.

Kimberly Prosser, FPPEM, APR, emergency management director with Brevard County, said that state contractors removed about 20 percent of the debris from Brevard waters.

That left 30,000 cubic yards of debris remaining.

In Brevard, 24 boats were stranded or wrecked by hurricane winds. The Florida Fish and Wildlife Conservation Commission has the responsibility for removing derelict boats.

But as of March, none of the boats damaged in the storm, or an additional 26 that were present before the storm hit, had been removed.

FWC has an ongoing vessel removal program but apparently was overwhelmed as a result of the storm.

In Brevard, seven of the derelict vessels, Prosser noted, are classified as being hazards to navigation.

At its March 26 meeting, the Brevard County Board of County Commissioners voted to authorize their chairman, Kurt Smith, to send a letter to the governor requesting that he make funds available to both DEP and FWC to complete the debris cleanup and derelict boat removal.

Another problem with the state's cleanup was that efforts varied widely from one county to the next.

In Brevard County, about a fifth of the necessary work was completed.

Clay County fared far better with an estimated 60 percent of the debris in and along the St. Johns River having been cleaned up.

In Volusia County, state contractors completed a debris survey by April 15.

John Ward, director of the Clay County Emergency Management Department, said his county may have had such a high removal rate because DEP's contractors began their work in Clay and Putnam counties along the shores of the St. Johns River.

Most of the debris there was lumber from docks and boathouses as well as trees that washed into the river.

With the dry season now in progress,

most of the remaining debris is stranded on shores or pushed up into creeks and out of the main channel of the river.

Ward said that if the waters rise during the rainy season, the debris may be pushed back into to the St. Johns, risking injury to recreational boaters and damage to vessels.

DEP advised Volusia County officials that the department had run out of money and, it appeared, would not be removing any debris.

"As of today (Apr. 4, 2017), neither DEP, nor their contractor, has removed any hurricane debris within the state of Florida waters of Volusia County ... The \$10 million allocated funds from DEP were spent in counties other than Volusia County," wrote Jessica Winterwerp, PE, coastal director in the Department of Public Works at Volusia County.

She further noted that DEP's debris survey estimated that 20,000 cubic yards of hurricane-related debris were in state waters of Volusia County. They estimated a cost of \$3,465,000 for its removal.

Winterwerp expressed concern that on a high tide, a surge event or another hurricane, stranded debris could be re-floated, and again pose a risk to vessels, docks and

sea walls.

She wrote that submerged debris poses a significant risk to navigation and may "negatively impact the habitat for sensitive species."

Like other counties, the Volusia County Board of County Commissioners authorized its county manager, James Dinneen, to write the governor's office requesting funds for cleanup and committing his county agency's cooperation and support for it.

Some emergency managers contacted for this article mentioned the \$40 million price tag for cleanup in all counties.

So far, according to DEP's Mahon, his department has spent \$8.568 million out of a total of \$10 million budgeted for debris removal.

Contractors working in Clay and St. Johns counties received the most financial help, a little more than \$3 million, to remove 18,200 cubic yards of debris along 53 miles of the St. Johns River and Intracoastal Waterway shorelines.

Duval County contractors received \$2.110 million for removal of 11,800 cubic yards of debris along 25 shoreline miles.

Brevard County contractors received \$1.836 million to remove 10,800 cubic yards of debris along 50 shoreline miles.

In total, state contractors have removed 49,100 cubic yards from 148 shoreline miles.

The letters from county administrators seeking more debris removal funding led to some relief, announced in mid-April.

"The department just posted a budget amendment for an additional \$5 million," said Dee Ann Miller, DEP deputy press secretary. "While we do not have a specific breakdown yet, we are planning to reposition contractors to the south in the Volusia County area to continue our waterway debris removal efforts."


Gov. Rick Scott's emergency declaration made the state eligible for a 75 percent reimbursement from FEMA. But the state has to spend the money before it can be reimbursed.

Scott extended the emergency declaration for 90 days in March, so it will continue through most of the remaining fiscal year.


The extra debris removal money just announced will help at least Volusia County. But even with that, the total spent is less than half of what is needed to finish the cleanup effort.

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Exploratory well will provide insights into viability of Lower Floridan as supply source

By BLANCHE HARDY, PG

Drillers from A.C. Schultes of Florida Inc. in Gibsonton are in the process of completing an exploratory test/production well into the Lower Floridan Aquifer for the city of Clermont and the St. Johns River Water Management District.

The well is intended to provide new insights into the geology and hydrology of the Lower Floridan in southern Lake County.

"The testing is conducted to collect information about the Lower Floridan Aquifer where limited information is currently

available," said Danielle Spears, a spokesperson for the district.

The city and water management district hope to demonstrate the potential to develop the Lower Floridan as a source of potable groundwater supply capable of reversing the current impacts of over pumping in the Upper Floridan.

But the drilling has experienced some setbacks. The first well encountered problems at a relatively shallow depth and a second well is now underway.

"I think everyone learns lessons on every project, and this one isn't any different,"

said Gregory Schultes, vice president of A.C. Schultes. "I cannot specifically point out one lesson, but I think everyone involved is working together as a team to overcome any challenges that we face.

"This helps us bring to each challenge multiple views and ideas, and ultimately will move the project forward in a safe and efficient manner."

The wells are located at the city of Clermont's Sunburst Water Treatment Plant. The Sunburst work has a construction budget of \$5.94 million including funds provided by the water management district and the Florida Department of Environmental Protection.

The district is contributing \$900,000 of the estimated total project cost.

"Upon completion, we will have constructed a pilot hole to an approximate depth of 1,800 feet and tested the water quality at certain depths so the city of Clermont may make a determination if constructing wells in the Lower Floridan Aquifer is feasible in this general location," Schultes said.

"So far, we have faced the challenge of overcoming the surficial sands during surface casing installation and dredging in certain areas of the borehole," he said. "We are constructing the well with a Gefco Speedstar 4000 and are completing the work per the specification, which in-

cludes driving casing via vibratory hammer, direct mud rotary drilling and reverse air rotary drilling."

When drilling is complete, a step draw-down test will be run on the well to determine if the Lower Floridan can produce a sustainable supply of water.

Water in the well will be repeatedly drawn down and allowed to recharge at specified rates and time intervals until the test either fails or the aquifer consistently yields a sufficient volume of water to constitute a viable potable supply.

"Within the Central Florida Water Initiative Water Supply Planning area in which the city of Clermont is located, it has been determined that traditional groundwater sources such as the Upper Floridan are limited," Spears said. "The Lower Floridan Aquifer in this region, however, is considered a nontraditional source."

In addition to sufficient yield, the tests must demonstrate that the Lower Floridan is hydrologically isolated from the Upper Floridan to constitute separate groundwater supply sources.

"The Lower Floridan Aquifer test well that the city is currently constructing may assist in alleviating some of the stress on the Upper Floridan in the region if the testing proves promising and if the city demonstrates that the well can be utilized for production without causing adverse harm to water resources," said Spears.

DEP reviewing soil, groundwater analyses for Palmetto development

By BLANCHE HARDY, PG

After half a century of operation, the Palm View Hills Golf Course on 28th Avenue in Palmetto is closing its doors.

The 18-hole public course was built in 1965. Its closure reflects the current state of the game. Traditional 18-hole golf courses are suffering as less time-consuming nine-hole courses with more entertainment opportunities become more popular.

Closed courses are prime development targets and Palm View is no exception.

Highland Homes of Lakeland purchased the 58-acre course for \$1.4 million in January, 2016, to develop Jackson's Crossing, a 142-home residential development. They have since been dealing with the course's past regulated materials handling practices and the public's concern.

Like many golf courses destined for development, Palm View has environmental issues requiring significant attention

before site work can begin.

"Typically, contamination is located near pesticide storage areas and on the greens, where more products are applied," said Shannon Herbon, a spokesperson with the Florida Department of Environmental Protection's Southwest District office in Temple Terrace. "Contamination is found in isolated areas, rather than being a widespread/area-wide issue.

The most typical contaminant of concern on golf courses is arsenic.

Palm View's previous owners were cited as running a "sloppy operation" in a 2014 regulatory Clean Sweep report that noted deficiencies in their handling of chemicals.

Fertilizer, herbicides and pesticides were improperly stored, and regulated waste containers were unlabeled or mislabeled and improperly stored. An outdoor chemical mixing area was identified as a source of possible contamination.

The Clean Sweep report became an issue in the summer of 2016 during the review process for the development.

Residents in the area became increasingly concerned that grading and earthmoving to prepare the golf course for development would release contaminants in the vicinity. DEP became involved to assure that the site is properly assessed before site soils are disturbed.

"After meeting with the department on Sept. 29, 2016, the current property owner of the Palm View Golf Course agreed to complete additional testing," Herbon said. "The department requested a sampling plan for the proposed environmental testing to be conducted."

The sampling plan, submitted by Morris Engineering & Consulting LLC and Horner Environmental Professionals Inc., was received by the DEP on Dec. 5, 2016.

After reviewing the plan, the department requested additional soil and groundwater analyses. The department is currently reviewing sampling results to determine its next steps.

DEP published a guidance document to assist golf course owners in better managing their sites. "Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses (2007)" contains guidance ranging from course design and construction to pesticide management. It is available on DEP's website.



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Calendar

May

MAY 2 – Course: Asbestos Refresher: Management Planner, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 2-5 – Course: Water Class C Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 3 – Course: Asbestos Refresher: Contractor/Supervisor, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 4 – Course: 8-Hour OSHA HAZWOPER Annual Refresher, Tallahassee, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 4-5 – Exam: Backflow Prevention Recertification Exam, West Palm Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 6-7 – Exam: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 10-12 – Meeting: Florida Society of Environmental Analysts Spring Meeting, Clearwater Beach, FL. Call (941) 748-5700 or visit www.fsea.net.

MAY 10-12 – Course: Process Control of Waste Treatment Plants, Marathon, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 11-13 – Convention: Florida Ground Water Association Annual Convention and Trade Show, Orlando, FL. Call (850) 205-5641 or visit www.fgwa.org.

MAY 12-13 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 15-16 – Course: Sequencing Batch Reactor Operation, Make it Work for You, Marathon, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 15-19 – 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.treeco.ufl.edu.

MAY 16 – Course: Initial Training Course for Spotters at Landfills, C&D Sites and Transfer Stations - 8 Hour, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 16 – Course: Refresher Training Course for Experienced Solid Waste Operators - 8 Hour, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

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MAY 16-18 – Course: Initial Training Course for Operators of Landfills and Waste Processing Facilities, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 16-18 – Course: Initial Training Course for Landfill Operators and C&D Sites - 24 Hour, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 16-19 – Workshop: National Pretreatment & Pollution Prevention Workshop & Training, San Antonio, TX. Presented by the National Association of Clean Water Agencies. Call (202) 833-2672 or visit www.nacwa.org.

MAY 19-20 – Course: Cross Connection Control Ordinance and Organization, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

MAY 22-24 – 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.treeco.ufl.edu.

June

JUNE 1-2 – Exam: Backflow Prevention Recertification Exam, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 3-4 – Exam: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 3-4 – Exam: Backflow Prevention Recertification Exam, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 5 – Course: Initial Training Course for Spotters at Landfills, C&D Sites and Transfer Stations - 8 Hour, Port Charlotte, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 5 – Course: Refresher Training Course for Experienced Solid Waste Operators - 8 Hour, Port Charlotte, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 5 – Course: Refresher Training Course for Experienced Solid Waste Spotter - 4 Hour, Port Charlotte, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 5-6 – Course: Initial Training Course for Transfer Station Operators and Materials Recovery Facilities - 16 Hour, Port Charlotte, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 5-7 – Course: Initial Training for Operators of Landfills and Waste Processing Facilities, Port

Charlotte, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 5-7 – Course: Initial Training for Landfill Operators and C&D Sites, Port Charlotte, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 6-9 – Symposium: 28th Annual Florida Lake Management Society Technical Symposium, Water Resource Management: A Balancing Act, Captiva, FL. For more information, email flmshome@aol.com or visit www.flms.net.

JUNE 7-8 – Symposium: Brownfield, South Florida Regional Symposium, Sebring, FL. Organized by the Florida Department of Environmental Protection. Call Terry Cerullo or Martha Avila at (239) 344-5600.

JUNE 7-9 – 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.treeco.ufl.edu.

JUNE 9-10 – Exam: Backflow Prevention Recertification Exam, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JUNE 12 – Course: Introduction to Backflow Prevention, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 12-16 – Course: Backflow Prevention Assembly Tester Training and Certification, Pensacola, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 12-16 – Course: Wastewater Class A Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 13-14 – Course: Cross Connection Control: Survey and Inspection, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 15-16 – Course: Cross Connection Control: Ordinance and Organization, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 17-25 – 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.treeco.ufl.edu.

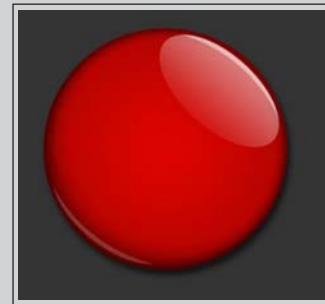
JUNE 20-23 – Course: Water Distribution Systems Operator Level 2&3 Training, Kissimmee, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 26 – Course: Hazardous Waste Regulations for Generators, Orlando, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

JUNE 26-29 – 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.treeco.ufl.edu.

JUNE 27 – Course: U.S. DOT Hazardous Materials/Waste Transportation, Orlando, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeco.ufl.edu.

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DRILL
From Page 1

Sole proprietor to LLP

There is no generalized business model for Florida's drilling companies. They run the gamut from sole proprietors to multi-owner partnerships and large corporations. The smaller drilling companies tend to

focus on one sector of the drilling industry, but none seem exclusively dedicated to a single niche.

The largest drilling companies have a mix of clients that evolves over time with the business cycle.

The majority have some level of involvement in soil and groundwater cleanup

work. But they also work for other clients on non-remediation work.

Those clients can include the phosphate and other industries, water resource development, development by public and private sector clients, and geotechnical projects for government and private sector clients completely unrelated to environmental resources or remediation.

Drilling companies predominantly work as subcontractors on projects, providing technical support to consultants and engineers.

Some large consulting firms operate drill rigs supporting only their own consulting work and do not subcontract to any significant extent. None of the drillers we interviewed for this article fell into in this category.

DEP shapes the market

The department's influence over the drillers market seems to far outweigh its financial investment in it. DEP does not directly contract with drillers, but it supports the consultants and geotechnical firms who hire drillers for remediation efforts.

DEP's influence comes from its persistence as a market for work since the early 1990s, and its contracting reforms implemented in 2014.

DEP's PRP established an online state contractors' bidding process that many drillers consider a clamp on statewide prices for drilling.

Drillers traditionally priced their work on a per-foot-of-drilling basis. They typically increase this pricing model for small jobs to cover fixed costs, but see more profit in larger jobs where the per-foot model can easily cover their fixed costs.

Again this year, some drillers mentioned that DEP's drilling fee structure, with a narrow range of per-foot pricing, is stingy on small projects, making profitability difficult to achieve.

But PRP officials have not been indifferent to the needs of drillers as the post-reform program continues to ramp up. Over the past year, the Florida Ground Water Association has conducted quarterly status meetings with DEP administrators, including PRP Administrator Diane Pickett, PG.

Ben Huss, president of Huss Drilling based in Dade City, said that working on PRP projects "has gotten better in the past six months."

Mike Johnson, manager of environmental drilling with Mulberry-based Custom Drilling Services, echoed that sentiment.

Scheduling for PRP work continues to be an issue with drilling contractors. Contractors too often face last-minute rescheduling delays—delays that can occur just a few days before they are expected to be in the field, leaving them insufficient time to find suitable replacement work.

Drillers also noted that PRP approval for modified work plans on site is too slowly handled, and can involve a return trip to the site to do a few additional wells or other work that could have, and should have, been done on the original site visit.

They suggested that if consultants and drillers are able to make the decisions on site, both they and the PRP would likely be better served.

Early in PRP's reform process, the effort to implement electronic invoicing slowed payments to their primary contractors considerably, delays that affected well drillers as subcontractors with even longer intervals between work and payment.

But drillers said that payment delays are largely a thing of the past.

Prices still low

The drillers we interviewed this year all agree that the price structure for drilling in Florida is lower than it should be.

Huss, who enjoys a substantial client base outside of the PRP and has recently been drilling deep wells, said that he would like to be able to more adequately price in the risk of some of these deep well projects.

Chad Campbell, president of Preferred Drilling Solutions in Largo, characterized pricing on small jobs as "very difficult" because some of his costs, including insurance, in particular, are increasing significantly.

Fred Kaub, president and partner with GFA International Inc. based in Delray Beach, put the pricing issue into the sharpest perspective:

"As an industry, we need to be as responsible as we can about what value we bring to projects—and charge accordingly," he said. "Equipment is not getting any cheaper. And we have to be competitive to find and retain help."

Some drillers we help complained in the past that DEP's public bidding process has established a low benchmark for drilling prices in Florida.

"PRP's actions are still affecting prices," said Doug Leonard, president of Environmental Drilling Services in Orlando.

While it's hard to say how extensively DEP's monopoly influences other categories of drilling, the drillers we interviewed said the price for drilling needs to be more flexible, and at least some categories of drilling are justifiably more expensive to provide and should be charged as such.

The new technology question

The drillers we spoke to see no new drilling technology ahead for their businesses. Rotary drills, direct push tooling and sonic rigs are the three most commonly called for types of equipment.

Most companies operate multiple rig types to meet the requirements of their diverse client set.

If drilling services pricing begins to increase, perhaps drillers will update their drill rigs and consider other capital equipment needs.

For now, patience in waiting and watching for a purchase opportunity to buy new equipment is widespread.

Finding, keeping good help

Drilling is a service and, like all service industries, finding, training and retaining good employees is an essential element of successful business management.

"That is my biggest problem," noted Huss.

"It's hard with the dynamics of this generation we have to pick from," said Custom Drilling's Johnson. "We have a high rate of turnover."

He said that sometimes new hires will stay on the job less than a month. He has implemented an online test for personality, word correlation and self-perception that candidates take during the hiring process.

"I'm almost always taking applications," said Campbell. "(Drilling) is very hard work. It takes the right kind of personality. I have guys doing it 20 years. Others don't come back after one day."

With respect to hiring, Leonard said that he has been fortunate to have found long term people.

"I have 12 employees and most of those 12 have been around for years," he said.

He is currently hiring to fill one position and acknowledged that it is difficult to find the right person.

"Getting the right people in line with what we are doing, and having the right talent in people running the rigs" is a big challenge, said GFA's Kaub.

His firm provides a wide range of geotechnical services and also competes for international contracting.

He said his company encourages a team approach with all professionals and drillers in the field.

"They like the challenges of the type of projects, our culture and our equipment, he said. "That goes a long way to help retain key people."


Education does not provide most of the technical skills for an aspiring entry-level well driller. So most drilling employers prefer candidates with prior experience.

Construction work is the usual qualifying experience for entrance level drilling technicians.

The work is hot and physically demanding. Advancement is earned by developing technical skills through on-the-job experience operating drilling equipment and learning multiple drilling techniques.

Education and training dominates most

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FEDFILE

From Page 2

The EPA would not consider another ban until 2022, when the agency is required under law to reevaluate the pesticide's safety.

On April 4, Earth Justice, legal counsel for the two environmental groups that filed the 2007 petition for review of chlorpyrifos, filed another lawsuit in San Francisco's federal court.

Their lawsuit argued that the agency did not issue a decision originally required by the court because it didn't make a final determination on whether chlorpyrifos food tolerances must be revoked.

No further information about that filing is available.

Manatees downlisted as threatened.

On March 30, the U.S. Department of Interior passed a final rule reclassifying the West Indian Manatee from "endangered" to "threatened."

DOI said that the increase in the number of manatees, particularly in the southeastern U.S., from several hundred in the 1970s to multiple thousands today means that the manatee is not endangered over all or a significant portion of its range.

Therefore, it does not qualify for endangered status under the federal Endangered Species Act.

The recent reclassification effort dates back to April, 2007. Following a five-year status review, the agency recommended reclassification based on population numbers at that time.

In July, 2014, DOI found on the basis of a petition from Save Crystal River Inc. that reclassification of the manatee "may be warranted."

Florida is the focus of U.S. manatee recovery efforts. In February, 2016, the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission Manatee Census estimated 6,620 Florida manatees live in state waters.

To protect these manatees, Florida will continue to retrofit water control devices on locks and levees, and power companies will continue to provide warm water outflows in the Manatees' winter refuges.

Florida counties will continue to implement manatee protection plans that reduce collisions between boaters and manatees, and increase manatee access to springs and other locations as winter refuges.

Additional protections now in place will remain because—without them—manatee populations would likely decline to endangered levels again.

The Save the Manatee Club criticized DOI's downlisting, claiming that it was "premature since risks and threats throughout the species range are not adequately controlled."

They noted that downlisting was not based on recovery criteria in the species' federal recovery plan because those have been "deemed inappropriate." The club said that the plan needed to be updated before downlisting the species.

They also noted ongoing water quality problems in Florida as significant threats to manatee recovery and contradicted DOI's conclusion that the population numbers in Florida justify downlisting.

"Manatee populations are declining or unknown in 84 percent of their range and face ongoing and increasing threats to their survival," the club said.

They also characterized the 12-month finding document as inadequate.

"It is an assortment of incomplete information that could have just as easily been used to come to an 'endangerment' conclusion had that been the wish of the current leadership and administration," they said.

DOI budget. The Trump administration's U.S. Department of the Interior budget is strong on "strengthening America's energy security by increasing funding for programs that support responsible development of oil, natural gas, coal and renewable energy on public lands and offshore waters."

It also supports DOI's disbursement of about \$10 billion annually for mineral development.

DOI said that funding for land management operations for the National Park Service, Fish and Wildlife Service and the Bureau of Land Management will ensure streamlined operations and greater access to public lands for multiple uses including recreation, conservation and responsible development of natural resources.

Notably, National Park Service "assets" will receive increased investment in deferred maintenance project spending by focusing available discretionary funding on parks.

Some of the savings occurs by eliminating what DOI characterizes as "duplicative programs." Mentioned specifically are discretionary Abandoned Mine Land grants that overlap with existing mandatory grants; National Heritage Areas that DOI said are more appropriately funded at the local level; and National Wildlife Refuge fund payments to local governments that overlap with other payment programs.

The Land Acquisition Fund will decrease by more than \$120 million. The Trump budget expects to reduce funding for payments in lieu of tax programs.

The U.S. Geological Survey will receive \$900 million to "focus investments in essential science programs" including funding for the Landsat Nine ground system and for research and data collection that informs sustainable energy development, responsible resource management and natural hazard risk reduction in 2016.

Trump's proposed USGS budget is the lowest in years. In 2015, 2016 and 2017, the budgets were \$1.045 million, \$1.062 million and \$1.168 million, respectively.

Comparing the cuts to other federal science agencies, USGS' 10 percent cut corresponds to a fifth of NOAA's research office cut, a third of EPA's proposed cuts and a half of NIH's proposed cuts.

Although smaller than other agencies in proportion, a \$250 million cut could make noticeable reductions in the contribution USGS makes to water quality programs across the country.

Species recovery projects. The U.S. Department of Interior will fund two projects in Florida to aid species recovery.

First, the Lake Wales Ridge National Wildlife Refuge will be funded to restore fire-suppressed scrub and sandhill habitat that will benefit 11 listed plant species and the endangered Florida Scrub Jay. The funding is primarily for prescribed burns.

The project will also augment the only protected population of endangered Garrett's mint through seed collection and strategic dispersal.

Additional funding will support a project team to establish new populations of the endangered Miami blue butterfly over a much larger range in South Florida.

DOI intends to spend \$3.74 million in Florida and other states on nine projects to restore some of the nation's most at-risk species on or near national wildlife refuges.

The species of interest include butterflies, ocelots, beetles, birds and plants.

Gulf County's RESTORE plan. Gulf County received news in March that the U.S. Treasury Department approved its multi-year RESTORE Act spending plan.

In its first year, the Gulf County Board of County Commissioners approved adding the money to a pool for beach restoration projects slated to begin this summer. The funds are bolstering a local match requirement for the work.

Gulf County's plan encompasses a 14-year scenario for spending approximately \$1 million a year that the county will receive from fines collected as a result of the Deepwater Horizon oil spill.

In the first year, Gulf County expects to receive \$2.8 million, and then \$1 million a year in ensuing years.

Other potential spending priorities are sewer upgrades in Wewahatchka and Port St. Joe, and land acquisition for public beach access.

Gulf County is the first of eight qualifying Northwest Florida counties to receive approval by the U.S. Treasury, and has only to submit an application to receive the funds.

The county is also eligible to share a portion of Triumph Gulf Coast funding to be shared equally by the eight Northwest Florida counties most impacted by the oil spill.

This money is to be used for economic development. The Florida Legislature established Triumph Gulf Coast fund in 2015.

Gulf County may also receive money from the Gulf Coast Consortium, which distributes oil spill-derived money to 23 of Florida's coastal counties.

A plan for spending that money is still being completed. It would provide approximately \$800,000 each year for 15 years to support public-private partnerships such as sewer projects.

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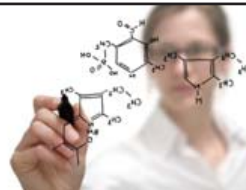
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Lehigh Acres putting finishing touches on stormwater project

By **BLANCHE HARDY, PG**

The Lehigh Acres Municipal Services Improvement District is in the process of implementing significant improvements to their stormwater management system.

MSID is implementing the Aquifer Benefit and Storage for the Orange River Basin, or ABSORB, project also known as the Southwest Lehigh Weirs project.

The city is undertaking the project in cooperation with the Florida Department of Transportation, the South Florida Water Management District and the Florida Department of Environmental Protection.

"Lehigh Acres MSID will improve stormwater storage by at least 754 acre-feet of storage depending on the severity of the storm event," said MSID District Manager David Lindsay.

MSID data indicates that the system will also remove up to 888 kilograms a year of nitrogen and 67 kg/yr of phospho-

rus from the Caloosahatchee and Orange rivers.

The project includes installation of 25 weirs within an approximately 10-square-mile area. Each weir will act as a shallow dam across a water course, raising the water level upstream and allowing the water course's flow to be regulated.

MSID anticipates the weirs will enhance aquifer recharge, make notable improvement in the water quality of the Caloosahatchee River and its estuary, and increase storage in the Orange River.

"Lehigh Acres MSID has positioned itself as a change agent for the betterment of Lehigh Acres and is helping to provide much needed services to its constituents," said Michael Welch, chairman of the MSID Board of Commissioners.

Funding for the project is being provided through a DEP total maximum daily load water quality restoration grant. Such grants are awarded annually by the state Legislature for implementing best manage-

ment practices to reduce pollutant loading to impaired waters from urban discharges.

MSID also entered into an agreement with the Florida Department of Transportation allowing FDOT to discharge water into MSID's stormwater system on a fee basis.

The agreement has advantages for both parties including advancing the schedules of both projects. FDOT has eliminated the need for roadside retention and MSID can construct the weirs without imposing a rate increase on their clients. MSID is working to maintain its existing assessment rate at \$26.29 per quarter acre.

MSID has a similar agreement with Lee County and has participated in other co-

operative capital improvement projects such as the Henry Canal Widening and West Marsh projects.

"These efforts bare no extra expense on ratepayers and show a true collegial effort between local government agencies and elected officials," said Welch.

The concrete work is now being completed on the last five of the 25 weirs. Construction completion is scheduled for July.

"Projects like this show the infinite possibilities for improvements for stormwater issues and showcase the positive impacts government agencies have when they work together for the greatest benefit for the communities in which we serve," noted Welch.

Water Star program making progress with residential, commercial water conservation

By **PRAKASH GANDHI**

Florida's construction community is playing a major role in a successful voluntary water conservation certification program that is celebrating its 10th anniversary this year.

As the state's population increases and the demand for drinking water follows, the state's builders are putting energy into the Florida Water Star program.

The Florida Green Builders Coalition is closely involved with the voluntary water conservation certification program for new residential and commercial construction and entire communities.

The program is ten years old this year, said Dierdre Irwin, water conservation coordinator with the St. Johns River Water Management District.

Irwin, who oversees the program statewide, said it works in partnership with comprehensive green building certification.

"The applicant follows a list of criteria in building his home or business that are essentially best management practices," Irwin said. "The program includes both indoor and outdoor water conservation measures."

Indoor steps include installing high-efficiency plumbing fixtures for toilets, showers and faucets, and also for dish-

washers and clothing washers, Irwin said.

Outdoors, the program requires using sustainable or "Florida friendly" landscaping. This includes choosing plants that are appropriate to the site and designing large landscaped beds that use less water instead of lawns, Irwin said.

"Other measures would include increasing shade from trees because that reduces evaporation from the turf grass and reduces the amount of water needed in the landscape," she added.

The largest component of outdoor water conservation measures relates to irrigation.

"The Water Star Program has multiple requirements to ensure that the irrigation system is as efficient as possible," Irwin said. "We also look for the correct design and installation of the system and the scheduling of irrigation."

Irwin said Florida's building community recognizes that the state must expand the use of reclaimed water to extend available groundwater supplies.

In many areas, utilities will need to develop alternative sources of water to bolster the traditional drinking water supplies.

Water conserving strategies inside the buildings and out in the landscape play a



The Florida water conservation program for residential and commercial construction is now in its 10th year.

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WATER STAR

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primary role in green building and are a main category in the certification process.

"Builders who are interested in sustainable construction can earn extra credits by taking part in the Florida Water Star program," Irwin said.

Over the past 10 years, the program has expanded tremendously, she said.

"When it started, it was only run within the St. Johns River Water Management District," she said. "Now, it's statewide. We started with only residential criteria. But over time, we have added new and existing commercial criteria."

About 5,000 homes have been certified by the Florida Water Star program.

"In addition, we have had a training program for landscape and irrigation professionals in which they can get certified," she said. So far, about 500 people have been certified.

The close relationship between the Water Star program and the Florida Green Builders Coalition has been a boost for water conservation and for the environment, she added.

"I think our partnership has allowed for mainstream acceptance of the Florida Water Star program," she said. "The Florida Green Builders Coalition is the number one certifying entity in Florida. It increases visibility for Water Star by being partners."

Before the Florida Water Star program was developed, there were a lot of differ-

ent ideas being floated around regarding saving water.

"What Florida Water Star did was develop achievable and affordable approaches for water conserving construction," Irwin added. "It provided a framework and a list."

Before any measures were formally adopted, officials tried and tested many

DELTONA

From Page 8

Lopez said the city's utility department maintains more than 500 miles of water and sewer pipe, currently serving more than 33,000 customers.

Deltona is also working with the state on Interstate 4 improvements to treat stormwater runoff from the highway to reclaimed water standards, and has already

DRILL

From Page 12

discussions regarding employment preparation and qualifications—but it does not apply to the drilling business.

"I'm unaware of any training for entry level drillers," said Kaub. "But it is an industry that could greatly benefit from it. It's all on-the-job training passed down from either a family member or coworker/supervisor."

A driller's work ethic includes a willingness and capability to work in low comfort conditions, the possession of an unusual skill set with limited application outside of the drilling industry, and the willingness to accept occasional-to-frequent out-of-town travel.

Florida market solid

Florida's drillers provide much of their services in state, although most said that they also work in adjacent states.

Several we spoke to have worked in multiple Gulf Coast states. GFA International's South Florida location allows the company to more easily pursue geotechnical drilling opportunities in the Caribbean Islands.

Nevertheless, drilling company managers and owners see Florida as the bright spot in the Southeast U.S. market.

Johnson said that his company maintains licenses in other states for drilling, but "Florida is a better market for us because it's our home area."

Campbell echoed that sentiment.

"Preferred Drilling Solutions serves clients in Georgia and Alabama, but right now there's enough work in Florida to keep us busy, which is great," he said.

As the market comes back, some drillers are now considering expanding operations to additional locations.

GFA International has multiple offices as does Preferred Drilling Solutions, which opened a new office last year in the Florida

ideas to determine what made the most sense from a cost and achievability standpoint.

"Without this program, we would have inconsistent, less-effective approaches to building water conserving homes," Irwin said. "We have worked hard with builders to help them produce homes that are water conservation friendly and cost-effective."

identified a pipeline corridor.

The St. Johns River Water Management District included stipulations in the city's consumptive use permit that require it to expand its reclaimed water system or face reductions in groundwater allocations.

The city recently joined the West Volusia Water Suppliers group to cooperatively work on developing projects that reduce reliance on groundwater.

Panhandle.

Kaub said that the Florida market is strong enough that they're looking to expand northward from their South Florida base. Specific locations are still under consideration.

Prospects for drillers

The EPA's 2017 contribution to constructing drinking water and wastewater treatment facilities dropped compared to 2016, but it remains substantial enough that upgrades and new construction will continue on a significant scale, even if it tapers a bit.

Local utilities, for the most part, can likely afford to pick up the funding slack.

The Trump administration seems to favor specific infrastructure projects.

On the campaign trail, Candidate Trump talked up roads, bridges, ports and dams as favored infrastructure projects to be funded by joint public-private partnerships. Water infrastructure was not on his list.

EPA Administrator Scott Pruitt, however, said that he supports water infrastructure development as well as brownfields redevelopment.

In the past, Pruitt has criticized "federal overreach," even when that hand came bearing money. Perhaps he has retained enough credibility to convince Congress that the federal hand bearing money is less egregious overreach than the hand displaying a list of federal regulations.

If so, it will greatly benefit Florida's drilling industry in the years ahead.

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