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Subject: Comments on 62-600 F.A.C. Rulemaking:
Date: Tuesday, August 30, 2022 3:04:11 PM

EXTERNAL MESSAGE

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62-600 F.A.C. Rulemaking:

Mr Barket - I am not an expert on lift stations. I am simply a retired engineer living near downtown Orlando. (My field of engineering was in the electric power industry, not sanitary systems.) About 10 years ago, a new multi-use facility was built close to me. The multi-use facility included a large apartment complex, a supermarket, several restaurants, a few small businesses, and a lift station. The lift station went into service in 2013. Since then, I have had the "opportunity" to observe a number of spills and how they were dealt with, by the owner, the local FDEP office, and the City of Orlando. On this basis, I would like to make some comments on the document, based on this experience.

This particular lift station had a number of spills during the first few years of operation. But none were reported. There is a bicycle path that goes past the lift station and it was not uncommon at all to see water flowing from behind some bushes near the lift station. I jog on that path most mornings and I inquired to the apartment maintenance people about this water and they told me it was irrigation water. One day I looked behind the bushes and I saw the water was coming from a manhole cover marked "sanitary", but I did not know what this meant. I actually thought it meant the water was clean, though I did think it was odd that they would keep irrigation water underground. When the manhole cover spilled, the water flowed over a pedestrian trail and into the local streets, flowing past people's homes to the storm drains about 150 yards away, into the local lake. People using this trail (dog walkers, joggers, walkers, cyclists, etc.) went through this stream and thought nothing of it. Then we had Hurricane Irma in 2017. There was a long-term power outage following Irma and at some point it became evident that the water was not irrigation water - it was raw sewage and it had been raw sewage all along. Apparently, the manhole cover was at a lower elevation than the lift station wet well cover so sewage spilled from the manhole instead of the lift station. It turned out that many people (including me) had jogged, walked or walked their dogs through raw human sewage for years and had gone home and tracked the sewage throughout their homes. Nobody knew.

Following Hurricane Irma (which occurred about the time I retired), I tried to keep close track of local sewage spills. The owner did not submit a report for the Hurricane Irma spill; the City submitted it because, they claimed, the owners did not know how to submit a report since they had never had a spill before (at least, as far as the City knew). In fact, they had spills but had never submitted a report. So, as far as FDEP and the City knew, there had never been a spill there. There were 6 more known spills after that in the next 2 years before they finally undertook a refurbishment of the station following a Consent Order with FDEP. As part of the Consent Order, the facility was required to commission an engineering report, which described several major spills that had not been reported to FDEP. I pointed this out to the local FDEP and asked them to investigate these previous unreported spills. The local office declined, saying that they were not aware of the spills because nobody reported them. Catch-22. If the owner does not report the spill, the owner cannot be fined because nobody can prove it

occurred, even though it was described in a fair amount of detail in an engineering report commissioned by the owner. Furthermore, from what I have been told, the fines for not reporting a spill are trivial - probably less than the cost of filing the report. So why should an owner file a report?

Personally, I think the same things happen throughout the state. I believe most spills go unreported and that the current FDEP policies actually facilitate, if not encourage, this. I don't think that the lift station I described is or was a particularly bad lift station. In fact, I spoke to the lift station maintenance people several times and they told me that this lift station was one of the "best" ones that they serviced. One fellow told me some stories about some of the other lift stations leaking chronically and filling up retention ponds with raw sewage that had to be pumped out periodically. So I really don't think this example lift station had a particularly poor operating record. Just the opposite. But it serves as an excellent example of what is wrong with the state's rules concerning lift stations.

My suggestions:

First, reporting of spills uses the "honor system". There is no requirement for automatic spill detection. Detecting a leak largely depends on someone from the public noticing it, realizing it is sewage, and calling the number on the sign (assuming it is a working number and not the cell number of some guy who left the year before). It could go on for days or weeks before somebody notices and takes the initiative to call. Automatic leak detection is clearly called for. Implementing automatic spill detection would be quite easy - almost trivial. Manholes and valve box covers could be instrumented with inexpensive pressure sensors. When the pressure drops below a certain level, there is an alarm. And lift station wet wells can be instrumented with level detectors. Most already are equipped by level detectors to determine when to turn on pumps. SCADA systems have been available for 50 years now and are very low cost. Why can't lift stations be required to sense spills and implement automatic SCADA reporting of spills? They could, but not if FDEP keeps writing the rules as if this were 1950. Granted, the pressure sensors and level detectors may not catch 100% of the spills, but they will catch 90% or more. It would not be difficult to implement some simple algorithms and/or additional instruments to catch effectively 100%. For example, if the wet well does not fill within 12 hours or so, it is likely that the pipe feeding the wet well is broken. If the valve that connects the municipal system to the lift station outflow does not open within a minute or so of the pumps coming on, it is likely that the connecting pipe is broken. And so on. (As I mentioned, I worked in the electric power industry, where the consequences of a fuel spill were not public health; they were dollars. Those systems were heavily instrumented and had algorithms to detect leaks that were much more sophisticated than this.) A SCADA system could send the alarm to the local FDEP or governmental environment office, where it could be followed up and a time could be associated with the start of the spill. Currently, the start time of a spill is assumed to be when either the maintenance crew or the local authority shows up. In the case of Hurricane Irma, for example, the spill was recorded as starting a day after the hurricane left because there had been a 1-day curfew after the hurricane, so nobody showed up except the residents. The spill actually started during the hurricane, but the amount of the spill was grossly under-reported because there had been no witnesses from the City or from the maintenance people.

Second, there are no good means of estimating lift station spill amounts, other than eyeball guesses. I spent some time in the Army Corps of Engineers and learned methods of estimating water flows, which are necessary for design of culverts, etc. As I recall, these methods

generally consisted of measuring the flow area and estimating the the flow velocity from the roughness of the channel for the "Darcy friction factor". This is not done for sewage spills. The estimates are eyeball estimates and are generally made by the people who clean up the spills, who are very sensitive to the desires of their employers to estimate low. I have witnessed a number of disagreements between the owners and the City concerning spill amounts. In my observation, the owners generally grossly underestimate. The City underestimates, from what I have seen, but not nearly so badly. I once saw an owner's rep claim that a spill that had gone into the storm drains 150 yards away was under 1,000 gallons and the City rep claimed it was at least 5,000 gallons. Just to check, I measured the flow from my water hose and ran the hose in the street for 1,000 gallons. This is a good check, since the distance is almost the same and the path is very similar; the distance from my driveway is actually a bit shorter to the storm drains. This test resulted in a trivial amount of water in the street. It did not even come close to the storm drains. Most of the water was absorbed by the cracks in the street into the soil below. The City guy was obviously closer, but I suspect he was still low by at least a factor of two, and probably more. A simple way to resolve the question of how much spilled is simply to estimate on the basis of the metered water flow into the facility. We are billed that way (my wastewater bill is based on my water bill). Why can't this be used to estimate flow amounts for sewage spills? Simply record the flow from the time that the leak is detected until it is stopped. Granted, this may be a bit conservative if some water is being used for irrigation, but I think most large irrigation users can install a separate meter for the irrigation water. Using metered water flow would eliminate many disputes and facilitate the reporting process.

Third, your new rules effectively allow the owners to determine, for reporting purposes, whether there was a hazard to the local environment or health. This just begs for abuse. Even if the owners thought there was a hazard to the local health or environment, their staff attorney would certainly tell them not to acknowledge it. "Never admit fault." Isn't that what all attorneys say? We all know this. I think that any sewage flow that flows over a public right-of-way (a sidewalk, a recreational path, or a street, passing houses or businesses) is inherently a health hazard. No discretion required. This should be specifically and explicitly designated in the rules. Sewage flowing into a recreational waterway available to the public should also be explicitly described as both a health hazard and an environmental hazard. Again, this should be explicitly stated in the rules. If the owners want to show that it is a trivially small environmental or health hazard, it should be incumbent upon them to test to demonstrate this, not the local community.

Finally, there need to be some good financial incentives to encourage reporting. I recall speaking to a local FDEP rep some years ago. He said that he thought most spills were reported because of the fines associated with not reporting. He said something along the lines of "Do you know what the penalties are for not reporting spills?" I said no and he said "Up to \$10,000". I was not impressed. Maybe that was a lot of money in 1970 or whenever the rule was adopted, but it is not that much now, especially when you consider the likelihood of getting caught (maybe 1%, if that). So maybe the effective penalty is 100 bucks - probably less than the cost of doing the report. It needs to be a substantial penalty - at least \$100k - and should increase with inflation. Scofflaws should be vigorously pursued to create examples of what happens when owners thumb their noses at the rules.

In summary:

1. Require automatic leak detection on all new lift stations that carry more than a specified amount of sewage (e.g. 10,000 gallons per day) that could reasonably be expected to pose a

hazard to public health or environment, with a SCADA connection to the local FDEP office and/or governmental authority.

2. Estimate sewage spill amounts by using metered water flows into the facility; provisions may be made for separate metering of irrigation water.
3. Stipulate that sewage flows that travel over a public right-of-way shall be deemed a health hazard and sewage flows that flow into a recreational waterway shall be deemed a health and environmental hazard, unless proven (by the owner) otherwise.
4. Require that owners acknowledge the need to report spills as part of the permitting process. Increase fines for non-reporting and late reporting of sewage spills to actually incentivize owners to report them; actively pursue scofflaws, instead of ignoring them.

I understand that these may not be the subjects of your current review. But I think they should be added. If this cannot be done, I would like to ensure that I am invited to any future meetings on lift station requirements. I am very disappointed that Mr. Watkins did not let me know about the last meeting. I'm sure he knew that I had some input for that meeting. It appears that the only input came from owners, not the public. I can't believe any disinterested member of the public thought that the people who own the spilling facility should determine whether the spill was a hazard or not.

I plan to attend your meeting.

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Member of the Public