Comments on Rule

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Response: 06/18/2019

1. The Department has cited Chapter 62-701.510(1)(c) F.A.C. as the *"basis"* of modification for the addition of the ground water monitoring parameters consisting of Boron, Hydrogen Sulfide, and Sulfide (for the calculation of Hydrogen Sulfide).

   While we understand Chapter 62-701.510(1)(c) F.A.C. is the appropriate *pathway* for the Department's proposed modification, the Department should provide supporting evidence or documentation to justify the proposed monitoring additions via Chapter 62-701.510(1)(c)
   F.A.C. which clearly demonstrate they are"... *necessary to protect the environment and the public health and safety due to site specific conditions and types of wastes to be disposed of in landfills or solid waste disposal units."* This should include evidence to support the Department's supposition that these proposed parameters are derived from the types of waste disposed at solid waste facilities, specifically C&D disposal facilities, and that they are reasonably expected to be detected in the ground water as a result of the operations at the solid waste facilities. Otherwise it could appear the Department is arbitrarily proposing additional monitoring parameters and could do so in the future without proper justification.

   For example, if ground water quality data compiled from solid waste facilities in the Department's database exists which justifies the addition of Boron, Hydrogen Sulfide, and Sulfide, then this data should made available for review as the true basis or justification for implementing Chapter 62-701.510(1)(c) F.A.C. We are aware of only one study specific to Boron (and Strontium) published in March 2013 by the Hinkley Center (#89162). The database contained no reports pertaining to H2S in ground water in Florida. An internet search provides a plethora of links and documents indicating Sulfides and H2S are problematic in private water wells especially in South Florida, which indicates that they are not derived from the types of waste disposed of at solid waste facilities and not a result of the operations at solid waste facilities.

2. Chapter 62-701.510(1)(c) F.A.C. states:

   The requirements of this rule are the minimum standards for monitoring water quality. Nothing in this rule shall be construed to prevent the Department from imposing more stringent standards as *necessary to protect the environment and the public health and safety* <u>*due to site specific conditions and types of wastes to be disposed*</u> *of in landfills or solid waste disposal units.*

   In reference to underlined text above, it would be helpful if the Department would expound on the "site-specific conditions" which prompted the need for additional monitoring parameters. Also, we are not aware the types of wastes authorized for disposal at solid waste

facilities in Florida have changed, or will change, which would justify or form the basis of the proposed additional monitoring parameters. For example, Sulfate has been a required monitoring parameter at C&D disposal facilities and appears adequate to monitor the types of waste received - wallboard in this case. There should be no need to monitor additional forms of Sulfur, especially given the additional costs, which do not appear to offer any additional environmental protection beyond the currently required leachate indicator monitoring parameters. According to the Hinkley Center report (#89162), Boron may be derived from treated lumber; however, C&D disposal facilities stopped accepting treated lumber in accordance with rule changes finalized in 2010. As such, and in addition to Comment No. 1 above, it should be incumbent upon the Department to demonstrate the need for Boron monitoring given the rule history related to disposal operations, types of wastes, and published ground water quality data for example.

3. The solid waste rule revision of January 2010 (Chapter 62-701.730(20) F.A.C.) essentially banned treated wood from being disposed at C&D disposal facilities which was presumably based on ground water quality data or other important data which justified the ban. The ban essentially eliminated or reduced the amount of Chromium, Copper, and Arsenic derived from CCA treated lumber. We note also the Hinkley Center report (#89162) which studied Boron and Strontium at C&D disposal facilities stated in part: "Some *samples of drywall and treated lumber leached boron at concentrations greater than Florida's groundwater cleanup target level (GCTL)."* If the Department banned treated lumber disposal in 2010 based on compiled ground water quality for Chromium, Copper, Arsenic, and Boron, we question why the Department did not also ban the disposal of wallboard due to its presence of Boron and Sulfate, and instead, are now proposing additional monitoring parameters for Sulfur, apparently to detect extremely lower concentrations of Sulfur related to wallboard disposal
i.e. the ground water cleanup target level for Hydrogen Sulfide is 0.021 milligrams per liter while it is 250 milligrams per liter for Sulfate. In other words, the ground water standard for Hydrogen Sulfide is 11,900 times lower than Sulfate. To reiterate, Sulfate has been a required monitoring parameter at C&D disposal facilities and should be more than adequate to monitor the types of waste received - wallboard in this case. And although the state water quality standard for Hydrogen Sulfide (0.021 milligrams per liter) was based on toxicology, Hydrogen Sulfide is equally noxious with respect to odor and taste, identical to Sulfate (state standard is 250 milligrams per liter), which is not enforced by the U.S. Government because of its "aesthetic" properties and the fact that it would be virtually impossible for a human to consume such noxious water in order to suffer any toxicological effects.

4. The costs associated with the proposed additional monitoring parameters would be more burdensome that it would initially appear as the effort would extend beyond routine monitoring, with even more costs due to additional data analyses, reporting, and increased financial assurance costs to name a few. With respect to Comment No. 1 above, it is appreciated that the additional monitoring parameters are not proposed to be added under premise that a permittee can have them removed at a later date. Although the current solid waste rule allows permittees to apply for a permit modification to request certain monitoring parameters be removed from routine monitoring if consistently not detected,

significant time and effort would be required which would again translate into significant costs. We request the Department follow a similar process outlined in subsection 62-701.510(5) and paragraph 62-701.730(8)9e) F.A.C. and DEP Guidance Document SWM-04.44 to add parameters as would be required for permittees to delete specific parameters. This should include evidence to support the Department's supposition that these proposed parameters are derived from the types of waste disposed at solid waste facilities, specifically C&D disposal facilities, and that they are reasonably expected to be detected in the ground water as a result of the operations at the solid waste facilities.

5. Contrary to the proposed rulemaking which proposes additional monitoring parameters, the number of ground water quality monitoring parameters for C&D disposal facilities has been reduced over time such as the deletion of Phenols and non-enforcement of the Nitrogen Ammonia. The Department has given no prior indication to permit holders of C&D disposal facilities that the number of ground water monitoring parameters was insufficient especially given the recent requirements for liner and leachate collection systems starting in 2010.

6. In comparing the February 2019 draft rule changes for the proposed additional ground water monitoring parameters, the June 2019 rule change was revised and now applies only to C&D disposal facilities. The ground water monitoring requirements specified in Chapter 62-
701.510 F.A.C. have never differentiated between lined and unlined landfills or disposal facilities. Whether lined or not, a total of 69 routine ground water monitoring parameters are required of Class I, II, and Ill landfills, and 49 routine ground water parameters are required of C&D disposal facilities. Because liners have been required since 2010 for all C&D new disposal facilities or those with lateral expansions, we fail to recognize the logic or fairness in requiring the additional parameters *only* for C&D Disposal facilities via Chapter 62- 701.703(8)(c) F.A.C. including those which are lined. The current draft rule therefore appears to be an attempt to differentiate lined and unlined disposal units indicating lined landfills would not be a threat to ground water and therefore exempting them from monitoring Boron and H2S. If lined landfills are now construed by the Department to no longer be a threat to ground water quality, then shouldn't all disposal units with liners be exempt from all ground water monitoring parameters?

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Response: 06/19/2019

1. The rule to expand the monitoring parameters applies to evaluation monitoring, unlined landfills, and C&D landfills. But If I'm understanding the rule and the comment correctly, the sample from all landfill monitoring wells will be subject to one-time analysis of Boron and Unionized hydrogen sulfide. So essentially like testing for the long parameter list (Appendix II instead of Appendix I) for a newly installed well.

2. And if the answer to question number 1 is "yes." Then if detected, will the parameters boron and un-ionized hydrogen sulfide will be part of the parameters for testing going forward? Or will that be applicable to only those in evaluation monitoring, unlined landfills and C&D landfills? I'm doing some of the groundwater quality work at a Class I lined landfill and trying to gauge what to expect, if anything. Since your voice cut out from time to time too during the webinar, I wasn't sure if the response was "yes" or "no" to most of the questions.

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Response: 07/02/2019

62-701.730 Construction and Demolition Debris Disposal and Recycling.

(1) through (7) No Change.

(8) Water quality monitoring. A water quality monitoring plan that meets the criteria set forth in rule 62-701.510 and chapter 62-520, F.A.C., shall be included with the permit application. This plan shall be implemented and maintained by the owner or operator, and shall include provisions to provide the reports required by subsection 62-701.510(8), F.A.C., with the following exceptions:

(a) Unless a disposal unit is constructed or operated within 200 feet of a surface water body, or unless site-specific conditions could reasonably be expected to result in contaminants entering a surface water body, surface water sampling is not required. For purposes of this paragraph, a surface water body does not include a body of water contained completely within the property boundaries of the disposal site that does not discharge from the site to surface waters.

(b) The well spacing requirements of subparagraph 62-701.510(3)(d)3., F.A.C., do not apply. A minimum of one upgradient and two downgradient wells is required, as specified in chapter 62-520, F.A.C.

(c) Detection wells, and compliance wells if applicable, shall be sampled and analyzed at least semi-annually for the following parameters:

Field Parameters	Laboratory Parameters
pH	Aluminum
Turbidity	Chlorides
Temperature	Nitrate
Specific conductivity	Sulfate
Dissolved oxygen	Total dissolved solids (TDS)
Water elevations	Iron
Colors and sheens	Sodium
(by observation)	Arsenic
	Boron
	Cadmium
	Chromium
	Un-ionized hydrogen sulfide (by calculation)
	Lead
	Mercury
	Total ammonia – N
	Total Sulfide (for calculation of hydrogen sulfide)
	Xylenes
	Those parameters listed in EPA Methods 601 and 602

(d) Background water quality shall be established in accordance with the provisions of paragraph 62-701.510(5)(b), F.A.C., except that the analysis shall also include sulfate and aluminum. In addition, all background and detection wells shall be sampled and analyzed at least once every five years for those parameters listed in paragraph 62-701.510(7)(a), F.A.C., as well as **sulfate** ~~sulface~~ and aluminum**. (Do you want to include boron, total sulfide and un-ionized hydrogen sulfide too?)**

(e) The owner or operator of the facility may request a permit modification from the appropriate District Office of the Department to delete specific laboratory parameters or field parameters from routine analyses of detection or compliance wells and surface water. The Department will grant a request for a permit modification upon a demonstration that these parameters are not reasonably expected to be in or derived from the waste which ws received or disposed of at the facility.

(f) If monitoring parameters are detected in monitoring wells in concentrations which are significantly above background water quality, or which are at levels above the Department's water quality standards or criteria specified in chapter 62-520, F.A.C., the provisions of subsection 62-701.510(6), F.A.C., shall apply.

(9) Closure.

(a) At least 90 days prior to the date when wastes will no longer be accepted, the owner or operator of the construction and demolition debris disposal facility shall submit an updated closure plan to the Department to reflect any changes in the closure plan due to actual operational conditions at the facility. If unforeseen circumstances do not allow the notification within 90 days prior to ceasing to receive wastes, then notice shall be provided as soon as the need to close the facility becomes apparent. The updated and approved closure plan shall be incorporated into and made part of the permit.

(b) Final cover and seeding or planting of vegetative cover shall be placed on each disposal unit within 180 days after it has reached its final grade or ceased receiving wastes. Final cover shall consist of a 24-inch-thick soil layer, or a 30-inch thick layer consisting of approximately 50 percent soil and 50 percent ground or chipped yard trash by volume, the upper six inches of which shall be capable of supporting vegetation and shall be graded and compacted as necessary to eliminate ponding, promote drainage, and minimize erosion. If any disposal unit has been constructed with a liner system, the final cover must include a barrier layer with a permeability that is substantially equivalent to, or less than, the permeability of the bottom liner system or meets the alternative barrier layer design requirements in subparagraph 62-701.600(3)(g)6., F.A.C. The side slopes of all above-grade disposal units shall be no greater than three feet horizontal to one foot vertical rise. If the disposal unit is lined, the closure design shall include a barrier layer or other measures to ensure that the design leachate head over the liner is not exceeded after closure. The final cover shall be vegetated to control erosion. Disposal units that are aboveground shall be designed to control the flow of stormwater, such as building reverse sloping benches or terraces into the side slopes of the disposal units and shall contain down slope drainage ways with water flow energy dissipaters unless reasonable assurance is provided that adequate erosion control will be achieved in the absence of such measures.

(c) Any disposal unit designed with a geomembrane as part of the barrier layer shall have a gas management system installed during closure that is designed to reduce gas pressure in the interior of the disposal unit and to prevent failure of the final cover. The gas management system may be active or passive. An active system shall be designed and operated in a manner that prevents intrusion of ambient air into the disposal unit.

(d) Placement of final cover may be delayed if additional waste will be deposited on the disposal unit within five years, but only if the disposal unit is temporarily closed in accordance with an approved closure plan. Conditions of temporary closure shall include:

1. The disposal unit was constructed in compliance with its permit conditions,

2. A schedule for temporary and final closure is shown in the closure plan,

3. Final cover is installed on side slopes of each completed disposal unit which will not receive additional waste,

4. Odors and runoff are controlled,

5. The closure cost estimate takes into account the costs of temporary closure as well as the costs of the final closure; and,

6. An intermediate cover is installed on the disposal unit within 30 days after the unit stops accepting waste. The intermediate cover may be removed before placing additional waste or installing final cover.

(e) The owner or operator shall provide a certification of closure construction completion to the Department within 30 days after closing, covering, and seeding the disposal unit. The owner or operator shall also provide a final survey report done by a professional surveyor, in accordance with paragraph 62-701.600(6)(b), F.A.C., if disposal operations have raised the final elevations higher than 20 feet above the natural land surface.

(f) Upon receipt and approval of the documents required in paragraph **(e)**~~(d)~~, of this subsection, the Department shall, within 30 days, acknowledge by letter that notice of termination of operations and closing of the facility has been received. The date of this letter shall be the official date of closing for the purpose of determining the long-term care period, in accordance with subsection 62-701.600(8), F.A.C.

(g) Declaration to the public. After closing operations are approved by the Department, the facility owner or operator shall file a declaration to the public in the deed records in the office of the county clerk of the county in which the facility is located. The declaration shall include a legal description of the property on which the facility is located and a site plan specifying the area actually filled with construction and demolition debris. The declaration shall also include a notice that any future owner or user of the site should consult with the Department prior to planning or initiating any activity involving the disturbance of the facility's cover, monitoring system or other control structures. A certified copy of the declaration shall be filed with the Department.

(10) Long-term care. The owner or operator of the construction and demolition debris disposal facility shall continue to monitor and maintain the integrity and effectiveness of the final cover as well as other appurtenances of the facility, control erosion, fill subsidences, control objectionable odors, implement an odor **remediation** ~~remedication~~ plan that meets the requirements of paragraph 62-701.530(3)(b), F.A.C., if required, and comply with the water quality monitoring plan for five years from the date of closing. Before the expiration of the long-term care monitoring and maintenance period, the Department may extend the time period if the water quality monitoring system indicates that the facility continues to impact water quality at concentrations which may be expected to result in violations of Department water quality standards or criteria; if site-specific conditions make it likely that any contamination that may emanate from the disposal area would not be detected within the long-term care period; if the final cover does not have well established vegetation or is showing signs of continuing significant erosion problems; or if the permittee has not performed all required monitoring or maintenance.

(11) through (21) No Change.

62-701.510 Water Quality Monitoring Requirements.

(1) through (4) No Change.

(5) Initial and routine sampling frequency and requirements. Except as otherwise specified in a Department permit or order or in subsection (6) of this rule, frequency of sampling and analysis shall comply with the following. However, the owner or operator of a solid waste disposal unit may request a permit modification from the appropriate District Office of the Department to delete specific monitoring parameters or field parameters from routine analyses of detection or compliance wells and surface water. The Department will grant such modification upon a demonstration that these parameters are not reasonably expected to be in or derived from the waste contained in the unit, or are not reasonably expected to be detected in the ground water as a result of the operations of the facility.

(a) Demonstration to delete parameters. A demonstration to delete monitoring parameters may include an evaluation of:

1. The concentration or contrast between contaminants likely to leach from the waste in the disposal unit and in background water quality; and,

2. The types, quantities and concentrations of constituents in the wastes, and their degradation products, managed at the facility,

(b) Initial background water quality.

1. Initial background water quality for a proposed landfill shall be determined by analysis of at least one water sample taken from each well that was installed, and each surface water monitoring location that was established, during the site hydrogeological investigation. Any new monitoring well that is installed after completion of the site hydrogeological investigation, unless the new monitoring well is installed to replace an existing well within the monitoring network, shall also be analyzed for initial background water quality. The water quality information shall be submitted to the Department as part of the supporting information for the permit application.

2. Sampling and analysis for initial background ground water quality shall be for the parameters listed in paragraphs (7)(a) and (7)(c) of this rule, **and for unlined landfills shall also include the parameters in paragraph (7)(d) of this rule.**

3. Sampling and analysis for initial background surface water quality shall be for the parameters listed in paragraph (7)(b) of this rule.

(c) Routine monitoring well sampling. All detection wells, and a representative sample of background wells, shall be sampled and analyzed at least semi-annually for the ground water parameters listed in paragraph (7)(a) of this rule, **and for unlined landfills shall also include the parameters in paragraph (7)(d)** of this rule, in accordance with the water quality monitoring plan. The owner or operator of a solid waste disposal unit may request a permit condition or modification from the appropriate District Office of the Department to use an alternate monitoring frequency. The Department will approve such condition or modification upon a demonstration that the alternate frequency is appropriate based upon site specific lithology of the aquifer and unsaturated zone, hydraulic conductivity of the aquifer and unsaturated zone, ground water flow rates, minimum distance of travel and the fate and transport of parameters detected.

(d) Routine surface water sampling. Surface waters shall be sampled and analyzed semi-annually for the parameters listed in paragraph (7)(b) of this rule, in accordance with the water quality monitoring plan.

(6) Evaluation monitoring, prevention measures and corrective action.

(a) Evaluation monitoring and prevention measures. If monitoring parameters are detected in detection wells in concentrations that are significantly above background water quality, or that are at levels above the Department's water quality standards or criteria specified in chapter 62-520, F.A.C., the permittee may resample the wells within 30 days after the sampling data is received, to confirm the data. Should the permittee choose not to resample, the Department will consider the water quality analysis as representative of current ground water conditions at the facility. If the data is confirmed, or if the permittee chooses not to resample, the permittee shall notify the Department in writing within 14 days of this finding. The permittee, upon notification to the Department in writing within 14 days of the finding of the above sampling or resampling event, may also choose to demonstrate that a source other than the solid waste disposal unit is expected to be the cause of the observed detections in the water quality analysis. A report documenting this demonstration must be signed and sealed by a Florida registered professional geologist or professional engineer and submitted to the Department within 60 days of the demonstration notification. If a successful demonstration is made and approved by the Department, the owner or operator may continue detection monitoring as specified in this section. If the Department determines that a successful demonstration has not been made within 60 days after the permittee submits the demonstration report, or the permittee chooses not to pursue such demonstration, then upon notification by the Department, the permittee shall initiate evaluation monitoring as follows:

1. Routine monitoring of all monitoring wells and surface water monitoring locations shall continue according to the requirements of subsection (5) of this rule.

2. Except as provided in paragraph (b) of this subsection, within 90 days of notification from the Department to initiate evaluation monitoring and annually thereafter, the permittee shall sample and analyze a representative sample of the background wells and all affected detection wells for the parameters listed in paragraph (7)(c) **of this rule, and for unlined landfills shall also include the parameters in paragraph (7)(d) of this rule**. Any new parameters detected and confirmed in the affected downgradient wells shall be added to the routine ground water monitoring parameter lists required in subsection (5) of this rule, for the affected wells.

(6)(a)3. through (6)(c) No Change.

(7) Water quality parameters. The following list of water quality monitoring parameters shall be used for each type of sampling to be done.

(a) Ground water monitoring parameters:

Field Parameters	Laboratory parameters
Static water level in wells before purging	Total ammonia – N
Specific conductivity	Chlorides
pH	Iron
Dissolved oxygen	Mercury
Turbidity	Nitrate
Temperature	Sodium
Colors and sheens (by observation)	Total dissolved solids (TDS)
	Those parameters listed in 40 C.F.R. Part 258 Appendix I

(b) Surface water monitoring parameters:

Field parameters	Laboratory parameters

Specific conductivity	**Un-ionized** ~~Unionized~~ ammonia
pH	Total hardness (as mg/L $CaCO_3$)
Dissolved oxygen	Biochemical oxygen demand (BOD_5)
Turbidity	
Temperature	Iron
Colors, sheens (by observation)	Mercury
	Nitrate
	Total dissolved solids (TDS)
	Total organic carbon (TOC)
	Fecal coliform
	Total phosphorus (as mg/L P)
	Chlorophyll A
	Total nitrogen
	Chemical oxygen demand (COD)
	Total suspended solids (TSS)
	Those parameters listed in 40 C.F.R. Part 258 Appendix I

(c) Those parameters listed in 40 C.F.R. Part 258, Appendix II, as well as the field parameters specified in paragraph (a) of this subsection.

(d) **For unlined landfills the parameters boron and un-ionized hydrogen sulfide (by calculation). For purposes of the un-ionized hydrogen sulfide calculation, laboratory parameters shall include total sulfide.**

(8) No Change.

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First Response: 07/02/2019

To comment on this proposed DEP rule change, what is the scientific basis for the very low 0.021 mg/L CTL for H2S? I could find no US EPA primary or secondary DWStd for H2S. Only organoleptic stds are discussed in researching this compound. Also, where on the DEP web site can I find the backup for the proposed Rule changes, and Public comment?

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Response: 07/03/2019

In its draft rule amendments, FDEP is proposing that owners or operators of unlined landfill disposal units monitor for boron and un-ionized hydrogen sulfide (by calculation) and that for purposes of the un-ionized hydrogen sulfide calculation, laboratory parameters are to include total sulfide. Certain FCG-EC members own and operate on-site disposal units (e.g., coal combustion residuals (CCR)[1]landfills) at their power generation facilities. Some of those disposal units have base systems that do not strictly meet the landfill liner requirements for Class I landfills contained in Rule 62-701.400, F.A.C. These facilities are not required to comply with those liner requirements, however, as FDEP previously granted FCG-EC members' request for alternative requirements pursuant to former Rule 17-701.720, F.A.C. Current Rule 62- 701.220(4), F.A.C., recognizes the continuing legal effect of those FDEP determinations.

FCG-EC member CCR landfills are also regulated at the federal level under the U.S. Environmental Protection Agency's (EPA) CCR Rule found at 40 C.F.R. Part 257, Subpart D. Those rules (like Florida's) require groundwater monitoring for various constituents, including boron. EPA's CCR Rule does not, however, require monitoring for un-ionized hydrogen sulfide or total sulfide. The FCG-EC believes that monitoring for these constituents is unnecessary for disposal facilities like CCR landfills as un-ionized hydrogen sulfide and total sulfide are not typically associated with CCRs themselves nor would those constituents be expected to be detected in elevated concentrations from a CCR landfill. Therefore, the FCG-EC proposes that FDEP's draft Rule 62-701.510(7)(d), F.A.C., be modified as follows:

(d) Unlined landfill disposal units shall also monitor for boron and un-ionized hydrogen sulfide (by calculation). For purposes of the un-ionized hydrogen sulfide calculations, laboratory parameters shall include total sulfide. **Coal combustion residual landfills regulated pursuant to 40 C.F.R. Part 257, Subpart D are not required to monitor for un- ionized hydrogen sulfide or total sulfide unless the Department determine s. on a disposal unit -specific basis. that monitoring for these constituents is necessary to demonstrate compliance with applicable Department water quality standards**.

Paul Florence **Response: 07/10/2019**
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Please take the following comments in consideration with regards to the proposed Rule change to 62.701.510 and 62-701.730.

The notification process for the proposed Rule change leaves a lot to be desired. It is my understanding that only lawyers were directly notified of the proposed change and none of the directly affected operators received any notice from the department. I became aware of the proposed Rule change just days prior to the second workshop, when another operator who himself had just become aware of it called me.

To prevent this lack of notification in the future, the Rule should be modified to require the Department to directly notify all affected operators on any proposed Rule changes. FDEP already has all operators contact information in their data bases for notification of timely submission of Annual Recycling Reports as well as renewal deadlines for Financial Assurances.

The process for this Rule change should be extended until all facility operators are notified and another timely workshop should be held.

The registration notice for the June 18, 2019 webinar states that the proposed Rule modifications will "ensure adequate protection of water resources from specific containment leaching from waste disposed in solid waste management facilities." Simply adding Boron and H2S to the monitoring parameters will not prevent anything. When Arsenic was identified as a potential problem at waste facilities, the Department, with the help of private and public studies, identified CCA treated lumber as the source of Arsenic.

The Department then implemented a commonsense Rule change that required facilities to have a plan to eliminate CCA treated wood from disposal in unlined C&D facilities. This same process should be taken with regards to Boron and Sulfide. The materials that are likely to leach Boron and Sulfide should be identified and a plan to prevent them from entering the ground water implemented. This proposed Rule change is lacking scope and does nothing to actually protect water resources.

It appears from the recent conversations that lined facilities may be exempt from compliance with this Rule change. Perhaps unlined facilities that have a significant confining layer such as the Hawthorne Formation should also be exempt. It is arguable that a facility located over a confining soil layer, that would only impact a perched confined, nonproductive surficial aquifer would offer a greater protection to the Florida Aquifer than a lined facility that has potential to leach from a damaged liner over the Florida Aquifer without any natural confining layer.

As far as contamination of the aquifer with H2S goes, please see the attached flyer from Gainesville Regional Utilities that describes how the City utility removes the H2S from the Florida Aquifer before sending it as drinking water to people's homes. If H2S is already in the Florida Aquifer, then it seems unnecessary to test for it in the surficial aquifer below our site?

As for Boron, the allowable concentration of 1.4mg/L seems arbitrary. According to Health Canada the highest acceptable level is 5mg/L and the World Health Organization level is 2.4mg/L. Perhaps a more consistent standard should be determined.

The Rule change should also reflect a different standard for evaluation monitoring, site assessment and clean up for parameters found in exceedance as a result from disposal of permitted material. FDEP sets the standards for disposal of C&D debris and most operations strive to always be in full compliance with the Rule. If now, the Department suspects that Boron and Sulfide are a problem associated with permitted materials, then the state should work with operators to better protect ground water and the State must share some responsibility for allowing disposal of materials that may now be found to be problematic. It is inherently unfair to punish an operator who has complied, in some cases for over 35 years, with the disposal standards set by the State. I certainly do not want to impact the environment any more than necessary with our disposal operation, but at the same time I do not want to be vilified or have my reputation tarnished for doing exactly as prescribed by Rule for all these years. I am willing to help in any way to provide a pathway to better methods and better regulation of C&D debris disposal.
Thank you for your time.

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Response: 07/10/2019

1. Will all solid waste facilities be required to monitor water quality for boron and hydrogen sulfide?

2. If so, if boron and hydrogen sulfide are not detected in groundwater at the solid waste facility, can those constituents be removed from the monitoring parameters list following 1 year (or a predefined period) of monitoring?

3. Several municipalities co-locate landfill facilities with waste water/water treatment plants, has any consideration been given to landfill facilities that are located on the same property or adjacent to other sources of boron or hydrogen sulfide?

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Second Response: 07/10/2019

1. Other than the laboratory method requirement to analyze Sulfide in order to calculate H2S values, what is the basis for the Department's requirement to test ground water for Sulfide? Please also provide the supporting documentation so we can review the technical aspects. We are also requesting that the Department clearly specify the test method for H2S in the Rule. This is especially important for Unionized Hydrogen Sulfide, which is based upon a calculation. Additionally, many laboratories certified in the State of Florida may not be certified for all of these different Test Methods. We are asking that the Department take this in to account when selecting the test methods. It looks like Clark Moore has provided a list of methods: EPA 9034;9215; and SM 4500-S2H. However, these methods appear to only go down to mg/l (which would be adequate, if the Florida GTL for H2S was not so arbitrarily low).

2. Determining ground water compliance using a very low ground water standard such as H2S (0.021 milligrams per liter) by way of a laboratory "calculation" (as mentioned in) is inferior to a "direct measurement". I am concerned that permit holders of C&D disposal facilities will suffer economic hardship if the additional proposed parameters are adopted and the standard is exceeded as a result of weak or questionable laboratory methods and/or naturally occurring aquifer conditions (including redox) as opposed to being caused by waste disposal. We feel if the Department is made aware of an potential issue such as this, then the Department should fully address it in the Technical Advisory Committee format.

We are requesting that the Department clearly specify the H2S test method in the Rule. This is especially important for Unionized Hydrogen Sulfide which is based upon a calculation. Additionally, many laboratories certified in the State of Florida may not be certified for all of these different Test Methods. We are asking that the Department take this in to account when selecting the test methods and developing rule language. before filing for adoption of the proposed Rule revision.

3. H2S in ground water is affected by redox conditions of an aquifer analogous to redox conditions which affect the concentrations of Iron (refer to DEP Solid Waste Memo #SWM 13.9), In other words, H2S may easily be detected above the State standard of 21 ppb simply as a result of the "shadowing effect" as described by DEP in SWM 13.9 (i.e. not a result of waste disposal). The presence of organic matter also aids sulfur-reducing bacteria which drive up H2S gas in an aquifer. These naturally occurring aquifer conditions have not yet been taken into consideration, especially in relation to the problems the Department has encountered when trying to enforce Iron, and Arsenic and its redox states. H2S is also ubiquitous in the environment,

created by many naturally caused methods in wetlands, muck soils, and organic decay in general. Therefore, creating a stable background concentration for H2S on a Site will be problematic.

4. In our opinion, economic and environmental hardships to current permit holders will be caused in relation to unneeded evaluation monitoring, site assessment, and ground water cleanup especially in cases where corrective actions are based on false positive detections, laboratory method "calculations" or estimations which do not take into account the geochemical conditions in an aquifer system.

5. H2S is naturally a gas, and it will always be detected at C&D facilities in the soils above the water table, as the organics and wallboard degrade within the fill. We have found that this gas will accumulate within the monitoring wells around the fill waste footprint, and this gas could easily cause false positives, if entrained within the groundwater sample pulled from a well, especially the shallow wells, where the screen must intersect the water table, which allows landfill gas to enter the well screen. Therefore, landfill gas must be a background and cross-contaminant consideration for H2S detections, as it is for other LFG constituents, such as VOCs.

6. It is well known that private water wells all across Florida and the USA contain sulfur-reducing bacteria which produce H2S and its "rotten egg" odor. There is no Federal standard for H2S in ground water, and the standard for Sulfate is only a secondary standard and is not federally enforced. We question the Department's proposed rulemaking to add H2S monitoring at solid waste facilities in relation to these facts and the naturally occurring conditions in private water well settings.

The World Health Organization studied the need for an H2S groundwater standard, and found no need for it, see attached 2007 report.

This was after the development of the Rule 62-777 GCTL which has H2S at 21 ppb. A review of the Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, FAC (Feb. 2005) found no basis of the source, or reference to, a detailed toxicological analysis for the toxicity of H2S, based supposedly on gastrointestinal -nasal impacts. Therefore, we oppose the application of this weakly based GCTL for H2S to monitoring at C&D facilities.

Please reply to our concerns at your earliest convenience or notify us of any postings on the Rule changes website. (I have not seen any for this Rule Change)..Jim