Comments on Allen Harim 2019 Water Allocation Request to DNREC
Keith Steck, VP for Delaware Coalition for Open Government
March 24, 2021 (Revised)

I appreciate the opportunity to comment on this request.

Although I'm a resident of Milton, I'm speaking in my capacity as the vice president of DelCOG. I'm doing so because of issues with the process used to obtain public comments and the public's access to application information and other issues with the information in the application and the need for additional information before DNREC makes its decision about increasing the allocation of well water.

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Missing and Inaccurate Documents and Information

I'll begin by saying there is at least one document missing and other documents that contain inaccurate or incomplete information. Without a complete and accurate set of documents related to subject hearing, neither the public nor DNREC can make a solid, well-informed decision.

In the case of the public, we cannot provide full and reasonable comments when DNREC has failed yet again to provide a full set of documents regarding an application and when documents that it does supply contain incomplete and/or inaccurate information. This is the situation with this particular application and DNREC's documentation regarding this case.

Missing Map

The application specifically mentions on page 1 at item 5 states "Attach a map…" and the applicant indicates the map is Attachment 1. However, the docket for this application and the webpage for this hearing does not provide Attachment 1 or a map.

How is anyone supposed to comment without a map indicating where the wells and other key points are located? It's impossible to provide complete and fully accurate information and comments. Nonetheless, in an attempt to make my comments as reasonable as I can, I am relying on two maps associated with this docket--one map is from DNREC's hearing slides--see page 5--that shows an aerial view/map of the Harim facility in Harbeson; the other map I've used is a 2018 GoogleEarth map from the Nov. 30, 2020 KOWC letter requesting this hearing--see Figure 2 on page 7. I'll identify the limitations of these in my comments as appropriate.

No Documentation Available Regarding
the Allocation or Expired NPDES Permits

Neither the allocation permit number 89-0002AM1 nor the NPDES permit DE0000299 for the Allen Harim facility in Harbeson have been provided to the public. As noted above, this makes it impossible to conduct a full and accurate assessment of the allocation application and solidly supported comments. Nonetheless, the public works with what information we have been provided.

The failure to provide the actual allocation permit makes it impossible for the public to determine any specific allocation of water to specific wells, assuming such information is provided in the allocation permit. Further, it's unclear of the status of the permit, when it's expiration date is or was. It's also unclear how many and the exact location of wells drawing water are and whether they are protected as required under Delaware's Source Water Protection Act. Therefore, we are forced to rely on the gross allocation levels and their sampling and analyses results and comments regarding the wells are below.

As for the NPDES permit that was issued on Feb. 2, 2016, expired on Jan. 31, 2021, over two months ago and there is no indication that it has been renewed. Without any documentation indicating the current status of the permit, the public is therefore left to assume the permit expired and the plant is discharging illegally. Further, because we

do not have access to the permit, it's unclear whether the permit was modified to require testing for and setting discharge limits on copper and lead found at multiple wells at the Harim site in Harbeson in late December 2018 and January 2019. The relevance of the permit to this allocation is that the permit should have been modified to address the copper and lead readings and is further relevant because those testing requirements and allowable discharge limits would potentially have to be adjusted based on added lead generated as a result of any increased volume of water drawn.

Inaccurate Documents

As for the accuracy of the content of information provided to the public as part of this hearing, there are problems with accuracy too. To begin, slide 4 of DNREC slides for the March 24 hearing incorrectly shows 525 BILLION gallons per year using nine zeroes for the existing allocation rates and 578 BILLION gallons per year for the proposed rates, again using nine zeroes. In fact, item 7 on the application page 1 shows these to be millions per year, not billions.

The application itself also has inaccurate information. Specifically items 11 and 13 refer to listed facilities and wells from item 8, but item 8 pertains to Requested Rates of water by timeframe--day, month, year--and has nothing to do with lists; item 7, on the other hand, is table that asks for information about facilities and pumping and item 17 refers to "... all facilities listed in #7."

Similarly, there are problems with the accuracy and completeness of information provided by the applicant. The application and supporting attachment inaccuracies include:

1. In item 7, the table lists five (5) facilities--wells--and identifies them as 2, 3, 4, 5, and 7 and provides their respective permit numbers. On page 2 at item 14 it says to "Attach copies of the latest reports on chemical and bacteriological analyses for the water from each facility [well]" implying from the item 7 table and

the applicant refers to Attachment 4. However, Attachment 4--Chemical and Bacteriological Analyses--does not include this information for well #3.

2. While item 15 subsequently explains that water drawn from well 3 is used for wastewater treatment and receives no treatment prior to use; however, this practice would not identify any impurities and contaminants from well 3, including levels of copper and lead identified by the limited testing reported at the other wells and noted in Attachment 4 Chemical and Biological Analyses.

3. The sampling and testing data in Attachment 4 only cover a very short timeframe, basically less than a month from mid December 2018 through early January 2019. There's nothing provided prior to or after, despite documentation of copper and lead having been found during these sampling/testing periods.

4. There are also shortcomings regarding the reported well and other drinking water information and data in Attachment 4. For example, which well or wells are used for drinking water by employees and visitors? There's no information indicating if one, all, or some combination of the wells is providing drinking water. Similarly, the samples and testing refer to a "cafe sink" and a "surge tank" but there is no information about what these are or their purpose and which wells provide water to them. Moreover, there is no information about the exact location of the drinking wells, the cafe sink, a surge tank, and water fountain that was tested.

   Although there is no actual applicant-provided map in the packet made available to the public, unless these wells are side-by-side, it seems extremely unlikely that one person could move between 4 wells and take samples in about 10 to 15 minutes. It becomes even more unlikely if the wells are as scattered apart as they appear on the KOWC map (Figure 2) that shows several wells. Also, while it is possible that more than one person was doing the sampling in a highly coordinated timeframe, the documentation should indicate this.

5. Questions also arise with respect to the drinking water sample and testing data. Specifically, it is not clear who took the samples. This is critical because the sampling done on Dec. 18 shows only 11 minutes between the first well sampling and the fourth and final well sampling and 16 minutes between well sampling taken on Dec. 26. Moreover, drinking water samples were also taken at the cafe sink, a surge tank, and a fountain on these dates and they were similarly done in a few minutes after the wells. Curiously, drinking water samples at 4 wells were tested for copper and lead--and detectable levels were found--but a sink, surge tank, and fountain tested for other things were not tested for copper and lead.

    - Additional sampling and analytical data are needed because the applicant has not provided any data regarding levels of copper and lead at the surge tank, water fountain, and the cafe sink. While Attachment 4 provides considerable documentation showing sampling was done and test results reported for minerals, nutrients, and pathogens at wells 2, 4, 5, and 7 AND the surge tank, fountain, and cafe sink, there's no indication any sampling and testing for copper and lead were done at the surge tank, water fountain, or sink. Moreover, the Periodic Table of Elements symbols for lead and copper--"Pb, Cu"--are listed only beside each well sample in the analysis column of the 12/18/2018 and 12/26/2018 lab worksheets, see Application Attachment 4, even though there are also those kinds of worksheets for the surge tank, water fountain, and cafe sink.

    - Testing documentation--the sampling and testing results raise a number of questions. First, the documentation provides useful data that shows low levels of lead and copper in drinking water from wells. However, the timeframe covered by the documents provided is extremely limited. Second, these data are extremely limited but the results raise issues about why additional data covering several years, including the two+ years since those samples were taken, are not included. Those levels begin the

question: What levels existed in the water since January 2019? Third, because of the lead levels in particular in the December 2018 and January 2019 sampling and tests, how come additional results have not been provided to determine if there has been any pattern of an increase, a decrease, or no reportable levels. These points are essentially to determine whether there was an increase in copper and lead levels, as well as whether an increase in allocation should be allowed, given the high probability that increasing the volume of water will increase the level copper and lead in the drinking water, especially regarding lead, which accumulates in the bodies of individuals--particularly longtime workers--exposed to it.

- Of further concern about the copper and lead levels, especially the lead levels, is why the other sites--notably the surge pump, fountain, and cafe sink-- were not tested. One would reasonably expect if detectable and reportable levels of copper and lead were sampled and tested for and found in the drinking water wells, then copper and lead samples would also be taken at these other points and likely found. However, there's no indication these samples were taken and raises the question if these points have ever been tested, despite copper and lead found at the wells. It also raises questions as to the source of the lead in particular--is it in the actual water or is it leaching from the pipes. Moreover, if copper and lead are in the wells, even if no testing was done at these other points, is Harim doing any filtration to reduce or eliminate copper and lead--and other contaminants--at the surge pump, fountain, and cafe sink… and other locations? There is also no information about any copper or lead filtration process or equipment being used.

<u>Samples and Testing Showing Copper and Lead Levels But What is Known About these Levels and Exposure?</u>

Most of the samples that tested for copper and lead showed reportable levels during these sampling. What does Harim know about these levels of copper and lead in water over an extended period of time? Are these levels cause for concern? What is Harim doing to address copper and lead levels?

Although the sampling and testing data provided to the public and submitted with the application covered less than a month--Dec. 18, 2018 to Jan. 9, 2019--the findings with respect to copper and level raise some serious questions. As noted above, the application and attachments do not provide any data regarding whether there has been any testing for copper and lead done over any extended period of time, such as years prior to 2018 or since January 2019.

Why doesn't this application address the issues of copper and lead levels, including any pattern of copper and lead in the water used for processing chickens and to which workers are exposed? What about the methods used to to detect and analyze copper and lead during any previous testing outside of the 3-week reported timeframe? Given the overwhelming evidence that exposure to lead in particular--especially over time--is dangerous, doesn't DNREC in consultation with health experts on lead exposure need to obtain additional data and understand the implications before increasing the quantity of water used at the Harbeson location?

Moreover, if such testing was done, why have the results not been provided? Also, why is there no information on the source(s) of copper and lead, such as the water itself being the source or pipes within the plant? And what, if any, efforts have been taken to reduce or eliminate copper and lead in drinking or processing water?

These questions along with questions raised earlier about why the extremely limited data on testing for copper and lead and the lack of information bring to mind other questions as to exposure level of employees and chicken products, concerns about exposure, and what's being done to mitigate any exposure. At the most fundamental

level, collectively these questions raise concerns about increasing the allocation of water without knowing and understanding the level of copper and lead in higher volumes of water and possible increased exposure.

Employee Exposure and Safety

Given that samples and testing showed copper and lead in drinking water samples and these wells are used to process chickens, are employees at risk of exposure to copper and lead? There's nothing in the documents that discusses copper and lead exposure, but there is NO SAFE LEVEL FOR LEAD ACCUMULATING IN ANYONE'S BODY.

Lead accumulates over time and does not leave without active steps taken to remove it, such as chelation therapy. Doesn't an increase in water volume containing lead and exposure to that water over time mean an increase in exposure to copper and lead unless mitigation is in place?

What does Harim know about the source of the copper and lead from these reported dates and other unreported dates, such as the last two years? What steps is Harim taking to identify these sources? What is Harim doing to mitigate worker exposure to copper and lead during production or when drinking from fountains, such as using filtration systems? Has it tested workers to determine whether they have lead in their blood or bodies and if so what have been the results?

If workers and others were exposed to copper and lead during the reported 3-week period coming from the groundwater, what did Harim do about this? Did it bring in bottled water? Did it seal off the affected wells with these identified copper and lead levels and dig new wells? If there has been ongoing testing that showed continued copper and lead contamination from groundwater, what has Harim been doing about it?

If the copper and lead identified in the reported samples leached out of well pipes or pipelines within the plant, did Harim replace those pipes? Did it provide drinking water? If other testing since January 2019 has been monitored and found to contain copper and lead, what has Harim been doing since?

Has There Been or Is there Now Any Consumer
Exposure to Copper and Lead from Harim?

Equally important to concerns about worker exposure are concerns about consumer exposure to copper and lead. While Harim is likely very well protecting the public from any exposure to copper and lead in well water used in chicken processing, what those steps the company is taking are not clear because no such information is provided in this application.

Many chicken processors produce chicken products that contain water, which is indicated on packaging labels. This water can be in the form of added water, including marinades and injected solutions to keep the product plump and moist. Further, production and food industry literature and government food safety information state water is used in brines and added to all types of meat products, including chicken. It's unclear whether Allen Harim is one of these companies. It's also unclear if Harim follows these practices, what steps it takes to ensure copper and lead-- as well as other chemicals and pathogens--do not find their way into its products. But because water is used to process chickens and is commonly included with chicken products, it's not unreasonable to assume the water is in some of the company's products. Moreover, based on Harim's water allocation application stating that the allocated water is used in chicken processing, it is reasonable to assume that production water finds its way into its packaged chicken products.

So many questions come to mind. Given that water samples contained copper and lead during the late December 2018 and early January 2019 and Harim used water to process chickens then, were there any concerns about copper and lead getting into chicken products at the time? What steps did Harim take to reduce or eliminate copper and lead from getting into its chicken products at the time?

Since January 2019, what steps has Harim taken to determine whether copper and lead have been in water used to process chickens? Have there been any measurable levels

or copper or lead--other other contaminants--found in water Harim drew from the ground that was planned to be used to process chickens? Did Harim use that water? What steps has Harim taken and is currently taking to ensure no copper or lead is used in the processing of chickens and reaching Harim's end products, such as products with marinades or water, that are sold to institutional and individual customers?

And will any increase in water allocation result in an increase in copper and lead residue on chicken, especially processed chicken that contain water used in processing?

These questions are not meant to besmirch Harim. They are legitimate questions that need to be asked of all poultry and meat producers, as well as all other food processors in order to protect consumers.

Concerns About Copper and Lead
Being Discharged into Beaver Dam Creek

Because we do not have Harim's water allocation and NPDES permits, we do not know if they have been modified to address reported levels of copper and lead, including setting allowable discharge limits. However, if copper and lead are being drawn up through wells and the water is only treated with sodium hydroxide and zinc orthophosphate, does this treatment counteract copper and lead to the point it is not discharged?

If not, to what extent are copper and lead being filtered out and/or otherwise trapped through the wastewater treatment process? If there's inadequate counteraction, filtration, or capture, are copper and lead being discharged into the Beaverdam Creek?

Also, there's no indication that Harim tested the wastewater discharge for copper or lead during the period for which sampling and testing results were provided. A review of the documents for the Dec. 2018 and Jan. 2019 testing periods indicates copper or lead are present, But if they are not testing treated wastewater, it's impossible to know

whether copper or lead were discharged with other permitted metals, nutrients, or biologicals (pathogens) into Beaver Dam Creek.

Moreover, if there is no treatment or filtering taking place of water containing copper and lead, then allowing an increase in more production water will lead to more copper and lead going into the creek.

Such testing should be done to determine once and for all whether copper and lead have accumulated in Beaver Dam Creek along the Harim facility and downstream.

Bottom Line

The lack of key sampling information and the considerable and serious questions regarding water currently allocated and drawn--let alone a proposed increase in the water allocation--demand DNREC not increase the allocation. Harim's application does not mention how it addressed the copper and lead findings in its earlier samples, but it would be especially useful to know what it did then and what it is doing now. In fact, more sampling and testing need to be done and explanations and detailed information provided regarding what the company is doing to protect workers and consumers.

The lack of additional sampling and analysis data and information regarding contaminants and allowable compounds, metals, and pathogens as well as copper and lead since January 2019, makes it impossible for the public, researchers or others, and DNREC to know whether increasing the allocation is wise or safe. Because of the particular dangerous health and environmental concerns about lead in water, the allocation should be denied.

Moreover, increasing the allocation of water potentially puts workers at risk without knowing more about what steps Harim is taking to protect against bioaccumulation of lead in workers is of particular note. Similarly, many questions about how Harim is ensuring copper and lead are not finding their way into its products need to be

answered, as do questions about what is being done to ensure copper and lead have not and will not be discharged into Beaverdam Creek.

Until these questions are answered and DNREC and the public are satisfied that copper and lead are not getting into production water and drinking water or food products, then DNREC should not increase the allocation of water. Again, if water contains copper and lead, if you increase the allocation and Harim draws on that water, it's also likely drawing in more copper and lead. This potentially puts workers and consumers at risk.