




## MEMORANDUM

**TO:** Mayor and Council Members

**FROM:** Greg Meszaros, Austin Water Director 

**DATE:** February 11, 2022

**SUBJECT:** Boil Water Notice Questions and Answers

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For roughly 72 hours beginning Saturday, Feb. 5, our community endured a third water boil event in more than three years. We have heard directly from you and our residents. Residents are angry, frustrated, and have lost trust in us. I share your frustration and am deeply disappointed that this event occurred. Knowing how it has affected this community and our organization weighs heavily on me.

While each of the last three boil water events is unique, I recognize and respect that our organization is responsible for providing a reliable drinking water system. As I stated previously, we have begun a thorough review of the incident and will implement all corrective actions necessary to ensure such an occurrence is never repeated. To that end, Austin Water and the City's Human Resources Department have already begun an investigation, consistent with [Municipal Civil Service requirements](#), which I expect will be completed in the coming weeks.

Following initiation of the boil water notice, numerous questions arose from media, Council, and the public. While we were able to answer some questions in real time, many others needed more time and investigation. We have now attempted to answer the bulk of the questions we received in Attachment A. Because there is an ongoing investigation, though, we will no doubt have more questions and answers in the coming weeks. Additionally, responses to Council questions posted on the message board are offered in Attachment B.

I want to personally thank the numerous City employees, community volunteers, non-profit organizations, and Council for the tremendous amount of time and effort expended earlier this week to help our community deal with the consequences of the boil water notice. I am acutely aware that this hard work occurred immediately after a winter storm event, and on the heels of a difficult two years.

Finally, I want to acknowledge that Austin Water has hundreds of amazing employees who take their jobs seriously and worked tirelessly to immediately right this error. They are dedicated public servants and I sincerely hope that this Council and this community will not think less of

any Austin Water employees due to a small group of individuals who did not perform to our expectations.

Should you have any unanswered questions or additional questions not included in this memo, please do not hesitate to contact me.

Attachment A: Questions Regarding February 2022 Boil Water Notice

Attachment B: Council Message Board Questions

cc: Spencer Cronk, City Manager  
CMO Executive Team

**ATTACHMENT A**  
**QUESTIONS REGARDING FEBRUARY 2022 BOIL WATER NOTICE**

*The following questions were gathered from members of the City Council, residents, and the media. Many questions of similar intent were submitted by multiple individuals, but worded differently. Therefore, in most cases, the questions included in this document are not written exactly as submitted. For ease of use, questions are organized by topic area.*

**TIMELINE, ROLES, AND RESPONSIBILITIES**

**Why did it take 12 hours to notify the public of the boil water notice?**

Boil water notices must be issued within **24 hours of the incident** according to state and federal regulations administered by the Texas Commission on Environmental Quality (TCEQ), which consider exposure to potential contaminants. We notified customers within 12 hours of the turbidity incident; within the required timeframe. Below, please find a **preliminary timeline** of the actions during that 12-hour window on Saturday, February 5:

<b>Time</b>	<b>Action</b>
8:00 am	Increased turbidity was detected at Ullrich Water Treatment Plant. Additional operational and support staff were sent to assess the situation.
9:30 am	The Ullrich Plant was taken offline and water production was increased at Austin Water's other two plants (Davis and Handcox). The process of ramping up water production at Davis and Handcox took several hours. Water pressure within the Austin Water system and disinfection parameters remained consistent and within regulatory standards during this time.
10:00 am	Austin Water Incident Management Team notified to report to Emergency Operations Center by noon.
12:00 pm	Austin Water Emergency Operations Center was activated to collect data for submission to TCEQ.
3:00 pm	Data collection by Austin Water was completed. TCEQ was informed by Austin Water to review a potential treatment violation. Data was provided to TCEQ for review.
5:15 pm	Austin Water met with TCEQ to review documentation. TCEQ determined that a Boil Water Notice was required per state regulations.
5:30 pm	Austin Water prepared all notification language, got translations, and reviewed requirements with wholesale customers and elected officials.
7:30pm	Austin Water issued the Boil Water Notice to the public.

**What is TCEQ's role?**

The Texas Commission on Environmental Quality (TCEQ) is the state regulatory agency responsible for regulating drinking water providers in the state. TCEQ officials worked tirelessly during this event to ensure public, health and safety. They were available day and night to quickly complete their reviews and worked to help Austin Water lift the boil water notice as expeditiously as possible while following important and vital federal and state public health standards. Austin Water is grateful for their assistance during this event.

**What is the timeline for sampling/analysis/Boil Water Notice lift:**

Day/Timeframe	Action
Mon, 2/7 - 5:45 pm	Texas Commission on Environmental Quality (TCEQ) authorized sampling process to begin.
Mon, 2/7 5:45 pm to 11:30 pm	Samples were collected from 44 distribution points across the city and came back to the lab on a rolling basis.
Mon, 2/7 - 11pm	The laboratory prep and culture process began. Results take 18-24 hours for incubation.
Tues, 2/8 – 6:45pm	Results were complete and submitted to the TCEQ for review.
Tues, 2/8 – 10pm	Regulatory review of all the results and compliance documentation completed; TCEQ agrees that AW can lift boil water notice.
Tues, 2/8 – 10:20pm	Results communicated to the City Manager and Council, press release issued, website was updated, and AW began issuing notifications through Austin Water's customer portal
Wed, 2/9 – 8am	Warn Central Texas notifications were prepared and sent Wednesday, Feb. 9 to avoid notifying people during overnight hours.*

*\*see more detailed response regarding communications and notification process in the Communications section.*

**OPERATIONS****Was it possible to shift reliance to the other two treatment plants (Handcox and Davis) given that the problem was isolated to Ullrich? Does water from all three plants mix before it reaches the consumer?**

When increased turbidity was detected at Ullrich Water Treatment Plant, it was taken offline and water production was increased at Austin Water's other two plants (Davis and Handcox). Water pressure within the Austin Water system and disinfection parameters remained consistent and within regulatory standards during this time. Our other water plants provided reliability to keep water flowing to all parts of town when production capacity was limited from Ullrich. However, because our distribution system is interconnected and the water intermingles as it leaves all three plants, the issues at Ullrich triggered state and federal regulations requiring a city-wide boil water notice and subsequent sampling across our distribution system.

**What was the operational/process oversight that caused the spike in turbidity in this case?**

Austin Water staff have narrowed the cause to an internal operational issue at the Ullrich Water Treatment Plant that increased the addition of processed solids, mostly comprised of lime, during the treatment process, resulting in turbidity that exceeded regulatory requirements. A full review of this incident will be conducted to identify a list of corrective actions needed to prevent this from occurring again.

All chemicals that Austin Water uses in the drinking water treatment process are approved under the federal Safe Drinking Water Act. The unintended release of high turbidity water from the Ullrich Water Treatment Plant contained an excess amount of calcium carbonate (aka lime solids) that exceeded the turbidity limits established under federal and state regulations. Limits on turbidity are important because high levels of turbidity in the water can raise the risk of contamination, such as chlorine resistant microorganisms. No unapproved water chemicals were introduced into the distribution system. Austin Water took the Ullrich plant off-line and increased water production at its two other plants to provide water service to the community while a comprehensive assessment of the situation was performed.



**Approximately how much water was affected by the issue Saturday? What is the estimated cost of this system issue and corrective actions?**

These details will be determined during the After-Action Review process.

## **HEALTH/WATER QUALITY**

### **What contaminants were in the water?**

There has been no evidence of contaminants in the water during this event. The boil water notice was required because turbidity levels at Ullrich Water Treatment Plant exceeded regulatory requirements. Although our water disinfection parameters were strong and remained within regulatory levels, we issued a boil water notice in alignment with state and federal regulations, because the risk of contaminants is raised when there are suspended particles, or high levels of turbidity, in the water. The risk of contaminants can increase with higher turbidity, which is why regulatory limits for turbidity are an important element of measuring water quality.

### **How do higher levels of turbidity translate into health risks? What could have been in the water that would have made us sick? What are the symptoms?**

Though our water disinfection parameters were strong and remained within regulatory levels, we issued a boil water notice as the risk of contaminants is raised when there are suspended particles, or high levels of turbidity, in the water. Turbidity may indicate the presence of bacteria that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. These symptoms can be particularly severe in people who are not as resistant to infections as most of the population. If someone does experience severe symptoms, they should consult with their doctor to determine what actions should be taken.

## **COMPARISONS TO PAST BOIL WATER NOTICES**

### **How was this boil water event different than previous notices?**

The two previous boil water events were triggered largely by catastrophic weather events. In October 2018, historic rainfall caused the Colorado River to fill with silt, dirt and debris and quickly overwhelmed Austin Water and other surrounding area water treatment plant systems. In many communities, flood events pose regular challenges for water treatment systems. This was the first boil water event in Austin Water's over 100 year history and served as a clear indication that massive flooding events have increased in frequency and magnitude, thereby posing a greater risk to Austin's water treatment systems. In response, Austin Water implemented numerous [after action items](#) in place today.

In February 2021, Winter Storm Uri brought 164 hours of record setting single digit temperatures, crippled our entire state's power grid, and found the entire state under a disaster declaration. Ullrich experienced power loss and drops in water pressure below minimum standards resulting in a boil water notice. AW was one of 1,985 utilities who issued boil water notices during Winter Storm Uri. AW completed a detailed [after action assessment](#). To date, 37 (or 47%) after action items are complete, 25 (or 32%) are on-going, and 17 (or 22%) are in the planning stage.

This boil water notice was the result of operational error that increased the addition of processed solids, mostly comprised of lime, during the treatment process, resulting in turbidity that exceeded regulatory requirements. A full investigation of this incident is being conducted.

**Is there any level of automation or updated equipment that could have prevented the human error or acted as a failsafe?**

This question will be considered during the investigation of the event.

## **COMMUNICATION**

**What did you do to notify customers when the boil water notice went into place? When it was lifted?**

In addition to with working with the media, Austin Water notified customers and residents about the boil water notice/lift using two systems that are separate and managed by different departments for different purposes:

- 1) Austin Water's [My ATX Water](#) customer portal serves as a communications tool for AW to directly reach its customers; and
- 2) The [Warn Central Texas](#) notification system managed by the Homeland Security and Emergency management (HSEM) Department intended for emergency, life-safety situations.

There is overlap between the two systems, as Austin Water customers may be enrolled in both.

**How effective are the tools you used to notify the public?**

For My ATX Water, customer contact information that is provided as water accounts are set up is automatically loaded in the portal for emergency notifications. Of the 297,376 SMS text notifications sent to valid numbers at the onset and rescind of the boil water notice, 97% and 95% were delivered, respectively.

Apartment dwellers typically do not have a dedicated Austin Water account, so we do not have contact information to send notifications directly through the My ATX Water customer portal, so a notification through Warn Central Texas assisted us in making contact with the entire community. In addition to use of Warn Central Texas, in partnership with Austin Energy, an email was sent to multifamily customers notifying them of the boil water notice, water use restrictions, and potable water distribution sites.

In the Warn Central Texas system, there are more than 1.2 million contacts in the Austin Water service area. This does not mean 1.2 million people; it means 1.2 million unique devices received the message. For example, a single person can be registered with a work phone, cell phone, home phone, and email which would be four contacts in Warn Central Texas.

**Why did some people receive text messages that the boil water notice had been lifted at around 2 am but others didn't get that notice until 8am?**

Austin Water initiated outbound text messages in the My ATX Water Customer Portal when we received approval to rescind the boil water notice on Tuesday at 10:20 p.m. The messages are sent in batches and it takes several hours for all messages to be sent.

Messages through the Warn Central Texas (WCT) system were initiated on Wednesday morning. It takes approximately 45 minutes to complete the preparations to send a Citywide message via WCT and then another 1 hour to complete the process to send the text messages, emails, and phone calls. As this message was not considered a notification about a threat to life safety, we made the decision to send the message starting Wednesday at 8 am to avoid waking people in the overnight hours.



**How was this different from the timing of the communication that the boil order was in place?**

The boil water notice was issued earlier in the evening (7:30 p.m.), which left enough time for both the My ATX Water and Warn Central Texas systems to send messages before the overnight hours.

Austin Water received approval to lift the boil water notice after 10 p.m. If we had issued the WCT message, residents would have received calls and messages in the early morning hours. Since a lifting a boil water notice is not considered a life safety issue and we did not want wake residents in the overnight hours, we issued the Warn Central Texas notification starting at 8 a.m.

**Were any of these communications following new protocol set in place in the past year? If so, what is that protocol?**

We are leaning on our lessons learned from Winter Storm Uri to expand our communications efforts.

Warn Central Texas notifications were sent in English and Spanish which is consistent with the protocols we established prior to Winter Storm Uri. During Winter Storm Uri, however, the EOC communications team had difficulty reaching translation vendors due to lack of power and reliable internet access. That was not the case in this emergency response.

A new protocol implemented for the 2022 winter storm response and extended into the water boil emergency response included establishing a singular notices webpage at [austintexas.gov/alerts](https://austintexas.gov/alerts) where information was published in English and 12 languages, including American Sign Language.

Regarding My ATX Water, this is the second time Austin Water used the customer portal for emergency notifications. Austin Water sent everything in English for this event but is working with their vendor to expand to a multi-language notification process.

**WHOLESALE CUSTOMERS**

**How is Austin Water communicating separately with MUDs, some of which are still under boil water notices? Why is that MUDs continue to be under these notices?**

Eight wholesale customers of Austin Water began their sampling later than we did which is the cause of the delay. There is a 18-24 hour wait for sample processing and analysis, then review by the Texas Commission on Environmental Quality. We expect the boil water notice will be lifted for remaining wholesale customers on Feb. 10, 2022.

**ACCOUNTABILITY**

**What measures or processes are in place to hold those accountable for this situation?**

A full review of this event has begun to determine the events leading up to the operational error at the Ullrich Treatment Plant and to identify corrective actions needed to prevent this from occurring again.

City of Austin employees are protected by [Municipal Civil Service \(MCS\)](#) which require a properly documented inquiry before disciplinary action may be taken. We must balance those protections with ensuring sufficient accountability before additional actions are taken.

**What is the status of the employees involved in the operational error at Ullrich Water Treatment Plant?**

Austin Water has placed three employees on administrative leave pending an investigation into how this incident occurred and determining who may have been responsible. Administrative leave does not change the employee's employment status but removes the employee from the workplace while the investigation is underway. The employees will not perform plant operation duties until the investigation has been completed and management has assessed any applicable discipline in accordance with the [Municipal Civil Services Rules](#).

**BILLING**

**Will you change anything regarding the billing calculations, given the guidance to flush faucets, unusual behavior during the boil notice?**

At this time, there are no plans to adjust bills for this event. Flushing impacts would have been minimal.



**ATTACHMENT B**  
**COUNCIL MESSAGE BOARD QUESTIONS**  
**REGARDING FEBRUARY 2022 BOIL WATER NOTICE**

*The following questions were posted on the [City Council Message Board](#) on Feb. 10, 2022.*

**What, if any, contaminants were found in the drinking water?**

There has been no evidence of contaminants in the water during this event.

The boil water notice was required because turbidity levels at Ullrich Water Treatment Plant exceeded federal and state regulatory requirements. The risk of contaminants can increase with higher turbidity, which is why regulatory limits for turbidity are an important element of measuring water quality.

Austin Water routinely tests drinking water quality in accordance with federal and state rules. Throughout the boil water event, Austin Water continuously monitored disinfection levels at our treatment plants, as well as chlorine residuals throughout the water distribution system. All levels were within regulatory standards.

**Are water plant staff required to have any certifications or licenses?**

It is required for water and wastewater treatment plant staff to be licensed with the State of Texas through the Texas Commission on Environmental Quality within one year of employment for entry level staff. Other certifications are required for specific safety issues, such confined space entry.

Operations and Management staff start as Associates before progressing to Assistants and Seniors. Associates are required to have at least a "D" license within one year of hire, Assistants must have a "C" license, and Seniors must have a "B" license.

**How exactly did this happen, and what is being done to avoid a similar mistake in the future?**

On Friday, February 6, crews at Ullrich were working to bring a basin online. As part of the typical treatment process, a mixture of water and calcium carbonate is added to the basin to "seed" the basin. This higher turbidity mixture is needed to get the lime softening process started. The "seeding" – adding the high turbidity mixture – should have stopped after a couple of hours. Instead, it continued for most of the night. This resulted in high turbidity water that contained higher than normal levels of calcium oxide moving into the water filters – the next step in the process. At first the filters were able to remove the particles and produce water that met regulatory standards. Ultimately the finished water that enters the distribution system began exceeding regulatory standards for turbidity early on Saturday morning around 8 a.m. Because of this, the plant was shut down at 9:30 a.m. At that time, we began ramping up production at our other two water treatment plants to keep water flowing to customers.

**Does the technology and training vary from plant to plant?**

Yes, technology and training are different at each plant. Ullrich and Handcox Water Treatment Plants utilize upflow clarification for treatment, where coagulation, flocculation and sedimentation occur in one basin. Davis Water Treatment Plant utilizes conventional treatment, with separate basins for coagulation, flocculation, and sedimentation. Because treatment technologies do vary from plant to

plant, training requirements are different for personnel at each plant. Licensure training is standard across all three plants.

**I know the Davis WTP is about 70 years old, Ullrich is 53 years old, but Handcox WTP (WTP4) is less than a decade old. Should we be thinking about altering expected capacities for each?**

Capacities are less dependent on the age of the treatment plant and are more contingent on treatment plant capacity triggers and regulations related to expected growth within each plant's service area. This requires a lengthier discussion.

**Are there current redundancies in quality control designed to prevent the turbidity that led to the boil order? Can we take any immediate steps to tighten the system?**

Quality controls currently in place include online process control/water quality instrumentation, audible and visual control system alarms, frequent grab sampling and analysis, and escalation to supervisory staff. Austin Water has taken immediate steps to increase system redundancies that include increasing the frequency of turbidity audible alarms, automatic notification of supervisors for turbidity exceedances, and automatic shutdown of the filtration system when turbidities are exceeded.

**Are there additional technological advancements, automated systems or infrastructure improvements that could have prevented the error that led to the boil notice?**

As part of the after-action review, Austin Water will evaluate Interlock technology that prevents high turbidity water from leaving the filters, automatic external notification for elevated turbidities, and additional SCADA alarms as improvements and technologies that might have prevented this event.

**Were any recommendations from the winter storm after action report the cause of the turbidity issue?**

The turbidity issue at Ullrich was the result of operational errors and was not related to recommendations from the Winter Storm after-action report.

**Please describe the conditions at Ullrich during the heavy rain and ice event in the days leading up to the boil notice? Was the plant fully staffed?**

Conditions at Ullrich Water Treatment Plant following the heavy rain and freeze event were normal, with elevated awareness for operations staff. The staff was managing solids production, since hauling operations were suspended due to the freezing weather. Lime lines that are currently part of an ongoing construction project had frozen and needed to thaw out prior to bringing additional basins online on Friday afternoon. Because the lime lines are still under construction, staff on site were working on thawing the lines in addition to normal operational duties. The plant was fully staffed for operations on Thursday, Friday and Saturday. The remainder of support and maintenance staff were grounded due to the winter weather. Two maintenance staff and an operations supervisor were on site to provide additional support on Friday.

**Are there immediate steps you can take in the next 30 days to help prevent a recurrence in the future and rebuild the trust of customers?**

Austin Water has taken immediate steps to increase system redundancies that include increasing the frequency of turbidity audible alarms, automatic notification of supervisors for turbidity exceedances, and automatic shutdown of the filtration system when turbidities are exceeded. Over the next 30 days, Austin Water will be implementing enhanced turn-over procedures that will aid in communications between shift changes, as well as the escalation of communications to plant superintendents,

management, and executive staff when issues arise. We will also be providing supervision with remote software access to plant monitoring.

**Why is it not possible to shift reliance to the other two plants (Handcox and Davis Water Treatment Plants) given that it sounds as if the problem was isolated to Ullrich?**

When increased turbidity was detected at Ullrich Water Treatment Plant, it was taken offline and water production was increased at Austin Water's other two plants (Davis and Handcox). Water pressure within the Austin Water system and disinfection parameters remained consistent and within regulatory standards during this time. Our other water plants provided reliability to keep water flowing to all parts of town when production capacity was limited from Ullrich. However, because our distribution system is interconnected and the water intermingles as it leaves all three plants, the issues at Ullrich triggered state and federal regulations requiring a city-wide boil water notice and subsequent sampling across our distribution system.