

Feb 2022 Boil Water Notice

Austin Water Oversight Committee | March 31, 2022



Agenda

Stephanie Sue, P.E., Water Treatment Operations Manager

- ♦ **Process Analysis and Findings**
 - Process Analysis
 - Investigation Reports
- ♦ **After Action Implementation Status**
- ♦ **Response to Council Resolution**

Process Analysis and Findings

Overview

♦ Shift Activities:

- Monitor and adjust treatment processes to meet TCEQ regulatory and AW standards
- Perform necessary corrective and preventative equipment maintenance
- Adjust tasks based on weather, production, demand, etc.

♦ Operations Shift Roles:

- Lead – Main point of contact; makes decisions to run plant efficiently
- Driver – “Owner” of the plant; drives activities from control room
- Labs – Performs tests to monitor performance and meet regulatory requirements
- Outs/Station Checks – Checks equipment and collects samples

♦ Staff Licensing Requirements:

- TCEQ Surface Water Operator Licenses – Class “D” to Class “A”

Events leading up to incident

Week of January 31

- ♦ Winterization efforts completed and checked
- ♦ Normal winter production rates
- ♦ Ongoing centrifuge equipment issues
- ♦ IMT / DOC activated February 3
- ♦ Fully staffed

Events of Friday, February 4

Day Shift (7AM – 7PM)

- Increased production requested in the morning
- Lime feed systems frozen (CIP project)
- Basin 6 and 8 brought online in the afternoon
- Seeding process on Basin 6 commences at 5 PM and noted verbally and in pass down notes

Events of Friday/Saturday, February 4/5

Night Shift (7PM – 4AM)

- Staff directed to monitor sludge disposal and keep basins online
- Shift Driver focused on sludge disposal
- Lead operator did not fill in to Drive or delegate new roles
- Basin 6 turbidities start to climb at 9:30 PM
- Turbidity exceeded 100 NTU by 2:30 AM
- Source of increased turbidities misdiagnosed
- Staff looked for ferric sulfate leak for six hours

Events of Saturday, February 5

Night Shift cont. (4AM – 7AM)

- ♦ At 4:00 AM filter turbidity exceeds regulatory requirements
- ♦ Only two of eleven filters taken offline for washing
- ♦ Seeding process eventually turned off
- ♦ Basin 6 remained online throughout night shift
- ♦ No supervision notified throughout the night shift despite numerous calls from chain of command and Incident Management Team

Events of Saturday, February 5

Day Shift (7AM – 7PM)

- ◆ Night shift Lead left without fully participating in pass down to day shift
- ◆ Pass down from night to day shift did not indicate turbidity exceedances in filters
- ◆ Supervision notified by day operators at 7:15 AM
- ◆ Basin 6 is shut down at 7:38 AM
- ◆ Plant turbidity exceeds regulatory standards at 8:00 AM
- ◆ Ullrich WTP is shut down by 9:30 AM

Process Analysis and Investigation Findings

- ♦ Night shift was informed that Basin 6 was being seeded through pass down by day shift.
- ♦ As Basin 6 exceeded SOP standards, night shift misdiagnosed cause.
- ♦ Filter SOP was not followed when filters overloaded.
- ♦ SCADA was not reviewed until 4:00 AM, at which time seeding was stopped.
- ♦ No action was taken to turn off Basin 6 by night shift.
- ♦ Supervisors were not notified by night shift.

After Action Review

After-Action Review

Completed Actions:

- 💧 Increased remote SCADA access
- 💧 Timer-based seeding only
- 💧 Enhanced shift pass down communication procedures
- 💧 Training on plant parameters, action levels, and regulatory requirements

After-Action Review

Actions Underway:

- Filter control logic improvements
- External notifications for alarms
- Formalized operations training plan
- Review and update SOPs and guidelines

Response to Council Resolution

Alternative Risk Reduction Enhancements

Recommended Enhancements

- 💧 **Enhanced Core Staffing – 12 FTEs**
 - Overlapping Supervision from day to night shift
 - Onsite 24-7 coverage that includes day maintenance
- 💧 **Enhanced Support Staffing – 4 FTEs**
 - Additional onsite engineering and regulatory support
 - Plant-specific job aids, training, resources

Recommended Enhancements

💧 Modernization Software for Standard Operating Procedures

- Maps all standard processes to the procedural level
- Training materials with detailed daily task process maps
- Creates roles, responsibilities, and enhanced audit trails
- Enhances knowledge transfer

An aerial photograph of a wastewater treatment plant. In the foreground, there are large circular clarifiers with metal walkways. Behind them are rectangular aeration basins. The plant is surrounded by green fields and trees. In the far background, a city skyline is visible under a cloudy sky. A semi-transparent blue banner is overlaid across the middle of the image.

Questions

