



Back River WWTP: Update on Odor Action Plan

June 25, 2026

A Collaborative Effort Between Maryland
Department of the Environment, Baltimore City,
and Baltimore County

Tonight's Agenda

1. Welcome and Recent Highlights
2. Updated Bypass Notification Process
3. MDE Joint Inspection Results
4. Baltimore City DPW Updates
5. Summary and Moving Forward



Reminder: Where we left off last time

1. **Update on pier bypass notification light**
2. **Headworks** - Plant staff is working with scrubber company and headworks operator to improve operations
3. **Sludge Processing** - Continue multi agency effort to identify specific H₂S and odor sources from the plant
 - a. Review each piece of equipment onsite (PSTs, TSHTs, HRDs, etc.)
 - b. Identify changes in operations that could contribute to odors
 - c. Identify what odor controls currently exist or could exist
4. **MDE Joint Air, Land and Water Inspection**



Updated Pier Light/Bypass Notification Process

- Joint effort with MDE, Baltimore City and Blue Water Baltimore (CD Signatories)
- We are updating the system to focus directly on protecting public health
- The light will be lit for the following events
 - Any bypass of disinfection or a release of sewage into the storm drains in the plant - Light remains lit for 24 hours after the event is stopped
 - Two consecutive daily bacteria tests exceed the threshold of 410 MPN/100mL - Light remains on until sample results are below the water contact advisory threshold
 - Baltimore City is working on a push notification system similar to the one used for SSOs
- When the process will begin



Questions or Comments?



MDE Joint Inspection Results

May 15, 2026 - Joint Air (Odor Controls), Land (Sludge Utilization) and Water (Discharge Permit) Inspection

Inspection report was sent to the community on Monday, June 21

1. WSA Findings
2. Odor Issues
 - a. Headworks
 - b. Sludge settling and holding tanks
 - c. Sludge storage lagoons
3. Corrective Actions and Recommendations



Water (Discharge Permit and Consent Decree)

- Inspection included review of the full treatment process to verify compliance with the **Discharge Permit** and with the **Consent Decree** requirements
- Discharge Permit
 - Malfunctioning skimmer arm on Primary Settling Tank (PST) #4
 - Phosphorus and Chlorine exceedance in February
 - Build up of material over active passway
- Consent Decree
 - The plant is currently compliant with CD requirements

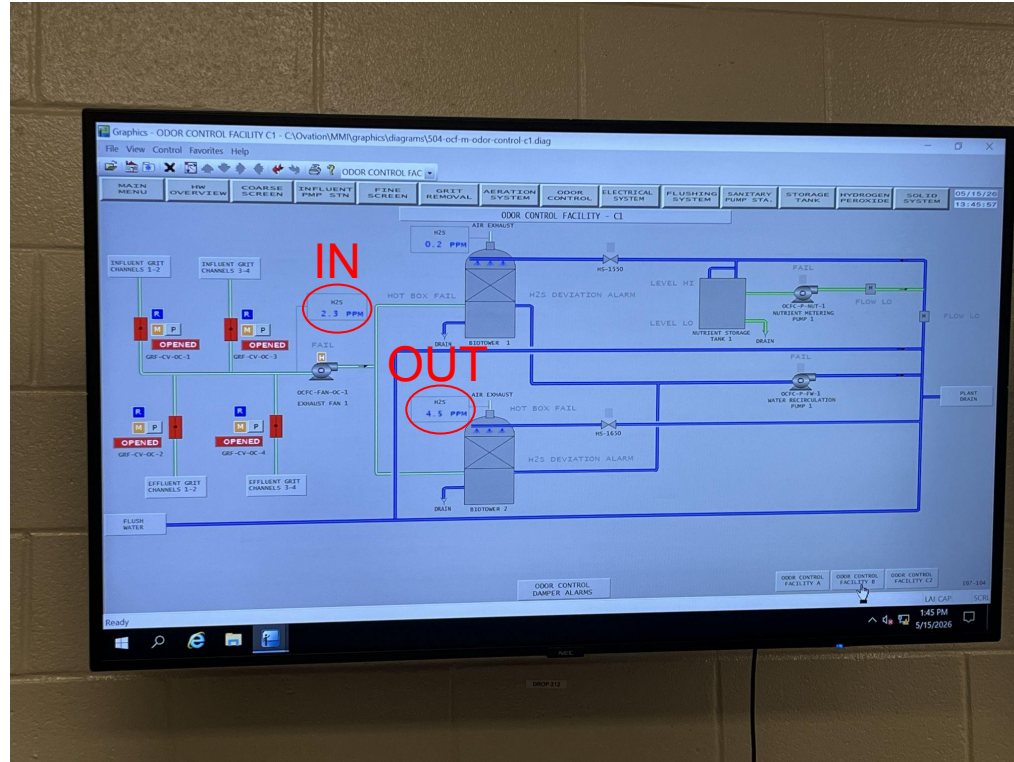


Odor Issues - Headworks

- Strong odors detected:
 - Fine Screen Building - inside
 - Grit Removal Facility - open to atmosphere
- Issues with BioAir scrubbers
 - Control room screen showed higher H_2S concentration entering than exiting the scrubber
 - Contractor (ProStart) confirmed plan to replace H_2S sensors
 - H_2S is not the only odor-causing compound



Odor Issues - Headworks BioAir



Odor Issues - Sludge Processing

Gravity Sludge Thickeners (GSTs) & Thickened Sludge Holding Tanks (TSHTs)

- Strong sewage and earthy odors in this area
- GSTs and TSHTs are open to the atmosphere
 - a. GSTs (6) - metal covers were removed years ago, weirs are covered
 - b. TSHTs (2) - metal covers were removed recently due to corrosion from H_2S
- Odor control scrubbers no longer in use - piping was removed
- Currently using fans and chemical deodorant on the TSHTs to minimize odors.



Odor Issues - Sludge Processing



Sludge Storage Lagoons

Sludge Storage Lagoons

- Pungent, foul, and highly earthy odors observed nearby.
- Roughly 22,300 wet tons (4,500 dry tons) of excess sewage sludge are currently stored out in the open lagoons.
- The open storage influx is due to the non-operational status of the onsite sludge drying pelletizers, caused by high levels of VOCs of incoming sludge.
- Overgrowth vegetation observed in the lagoons



Corrective Actions - Water

- **Equipment Repair:** Investigate the cause of the PST 4 skimmer arm malfunction and perform the necessary maintenance to restore its full operation
- **Effluent Compliance:** Investigate the root causes of the final effluent parameter exceedances from February 2026 and implement the necessary operational changes to return effluent quality to compliance and minimize future upsets.
- **Plant Maintenance:** Immediately remove the buildup of waste material observed collecting on a platform over an active passway in the Activated Sludge Plant to maintain accessibility and quality control.



Corrective Actions - Air

- **Headworks Tune-Up:** Complete the ongoing assessment and optimization of the headworks odor scrubbers, including immediate replacement of all faulty H₂S sensors.
- **Re-establish Tank Covers:** Complete engineering assessments to cover the open GSTs, Thickened Sludge Holding Tanks, and the weirs of the Primary Settling Tanks, ensuring all headspaces are actively ventilated through odor scrubbers.
- **Comprehensive Odor Control Plan:** Develop and submit a facility-wide Odor Control Plan to MDE. This must evaluate every odor source against modern industrial best practices, establishing administrative staff training, testing metrics, and strict equipment maintenance audits.



Corrective Actions - Land

- **Sewage Sludge Removal from Lagoons:** Start removal of sewage sludge by July 1, 2026. Remove all sewage sludge from the lagoons by September 1, 2026.
- **Vegetation:** Remove all vegetation from the sewage sludge storage lagoons after the sewage sludge has been removed. Additionally, provide a detailed engineering review on the integrity of the lagoon's liner. Submit a maintenance plan describing how the lagoons will be maintained, including preventing the growth of vegetation.



Questions or Comments?



DPW Odor Investigation

Back River WWTP
Update June 2026



BALTIMORE CITY
DEPARTMENT OF
PUBLIC WORKS



MONITORING & FIELD ASSESSMENT RESULTS

Joint Field Assessment — March 24, 2026

Five-person City/MDE team conducted an evening assessment after 8 p.m. across high complaint areas:

No significant odors at Walmart, North Point Blvd, skating rink, Gold's Gym, Villa Capri, I-695, Eastpoint Mall, or Headworks.

Air Monitoring & Data Collection

Two MDE air monitoring units were deployed on March 18 and March 31, 2026: one near the Headworks with a sonic anemometer and one near the Primary Treatment Tanks. Micro spike data indicates a higher frequency of events near the Primary Treatment area.

The **Smell My City app** tracks complaints and guides interagency assessments.

The City continues to conduct air sampling at multiple on-site and off-site locations; however, identifying the specific source of reported odors has had limited success to date. The City also responds to community odor complaints by conducting field investigations and collecting air quality data when odor conditions are reported.

MITIGATION MEASURES IMPLEMENTED

01

Operational Adjustments

Headworks operate under negative pressure, routing process air to odor control systems before discharge. Enhanced housekeeping and improved handling of odor generating areas.

02

BioAir System Optimization

Assessment completed of PLCs, H₂S monitoring, airflow, and pH. Manufacturer's optimization report is pending review for recommended enhancements. Covers air phase H₂S treatment.

03

Chemical Treatment Program

STX catalyst and hydrogen peroxide control dissolved sulfides in the liquid phase, providing up to 4 hours of suppression across seven primary settling tanks. Covers liquid phase sulfides (H₂S)

04

Third-Party Engineering Assessment (New)

Independent team assessment of odor sources with implementable recommendations for mitigation.

ONGOING ACTIONS & COMMITMENT



System Optimization

Complete BioAir optimization per manufacturer recommendations.

Finalize Source Technologies strategic modeling with company report.



Partnership & Monitoring

Continue MDE and County data sharing and joint assessments. Maintain air monitoring and Smell My City engagement.



Lagoon Remediation

Remove accumulated dewatered solids from lagoons with vegetation clearance. Coordinate contractor removal activities.



Interagency Collaboration

Harmonized standards and share collective strategies.

Community Commitment

Ongoing engagement with community and regulators through improved response timelines, targeted investigations based on verified data, and continued transparency in monitoring and reporting.

Questions or Comments?



Summary and Moving Forward

- **Recap:** updated bypass notification process, joint inspection report results, and ongoing odor investigation from Baltimore DPW
- **Follow-Up Items**
 - Share previous presentations and final inspection report on our website
- **Continue to report odors**
 - Smell MyCity App
 - mdeair.complaints@maryland.gov or call (410) 537-3215
 - Back River Waste Water Treatment Plant: 410-396-9620 or 410-396-9845
- **Next Meeting: Thursday, July 30, 2026 from 5:30 - 7:00 PM**
- **Thank you!**

