

City of Newark Wastewater Treatment Plant Annual Report 2025



Mission: Protect public health and the environment by efficiently treating wastewater, ensuring clean and safe water for our community, and promoting sustainable practices for a healthier future.



Introduction

The Newark Wastewater Treatment Plant exemplifies the City's dedication to meeting community needs while prioritizing environmental protection.

Originally constructed in 1948, the facility has undergone several modifications to better serve residential, commercial, and industrial users. In 1984, facing stricter treatment requirements and a Clean Water Act deadline set by the U.S. EPA for July 1, 1988, the City initiated plans for cost-effective upgrades. Not only was the deadline met, but the project also significantly improved the Licking River's water quality, enhancing both aquatic habitats and recreational opportunities.

Over the years, the plant has continued making major capital improvements. Notable projects completed in 1999 and 2000 included the construction of a new Influent Screen Building and the implementation of a Supervisory Control and Data Acquisition (SCADA) system. The Screen Building introduced fine screening and advanced waste processing for disposal, while the SCADA system provided real-time operational data, allowing for more precise and efficient plant management.

Further advancements were made in 2007 with the completion of the Electrical Switchgear and Substation/Septic Receiving Projects. The new septic receiving unit features an automated screening and compaction system, along with a swipe-card-controlled truck scale that streamlines waste tracking and billing. Additionally, a new Electrical Building was constructed to house the switchgear and the plant's existing generator.

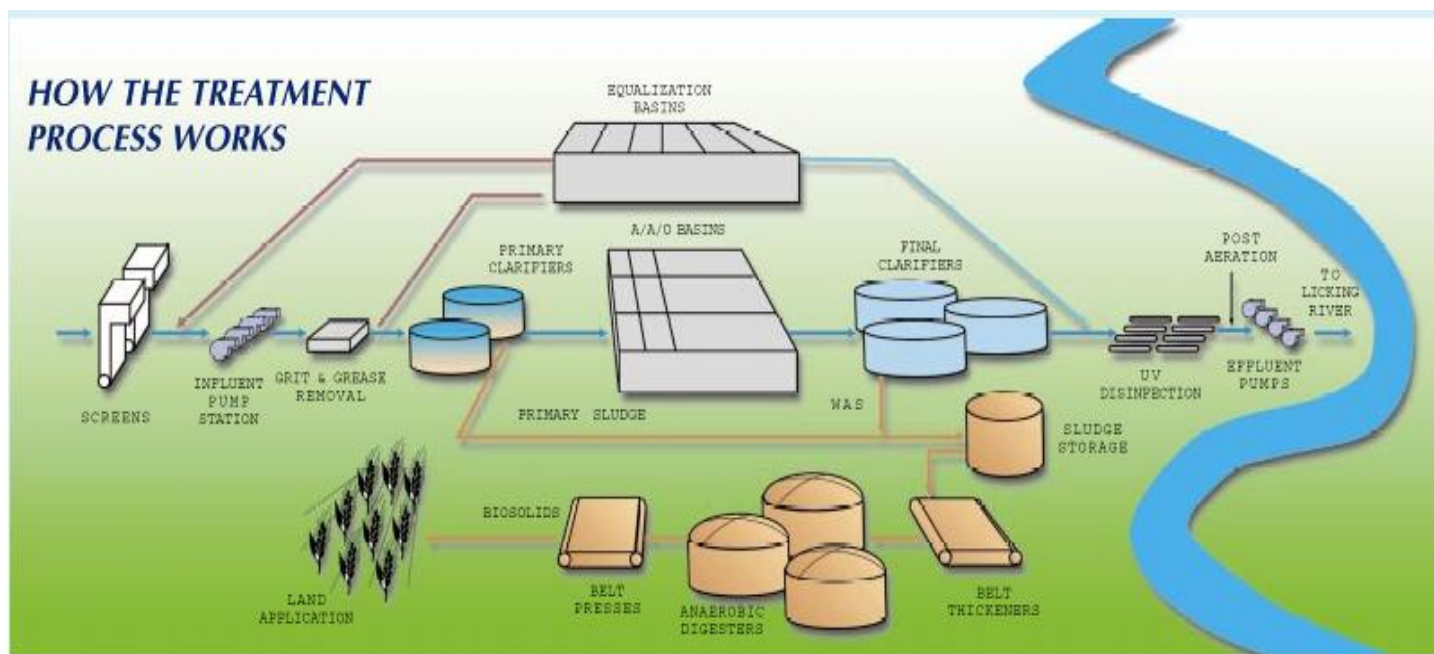
In 2006, the Licking River Interceptor Project was completed. This included a new 54-inch interceptor and two siphons at the confluence of the North and South Fork Licking Rivers. Combined with the existing 42-inch sewer line, these improvements increased flow capacity during rain events, reducing Combined Sewer Overflows (CSOs) in alignment with EPA regulations. Ongoing efforts to separate and eliminate CSOs led to the construction of a \$25 million high-rate treatment (HRT) system on the west side of the plant. Operational since early 2011 and substantially completed in 2012, the project received a \$5 million ARRA stimulus grant.

Additional upgrades followed, including:

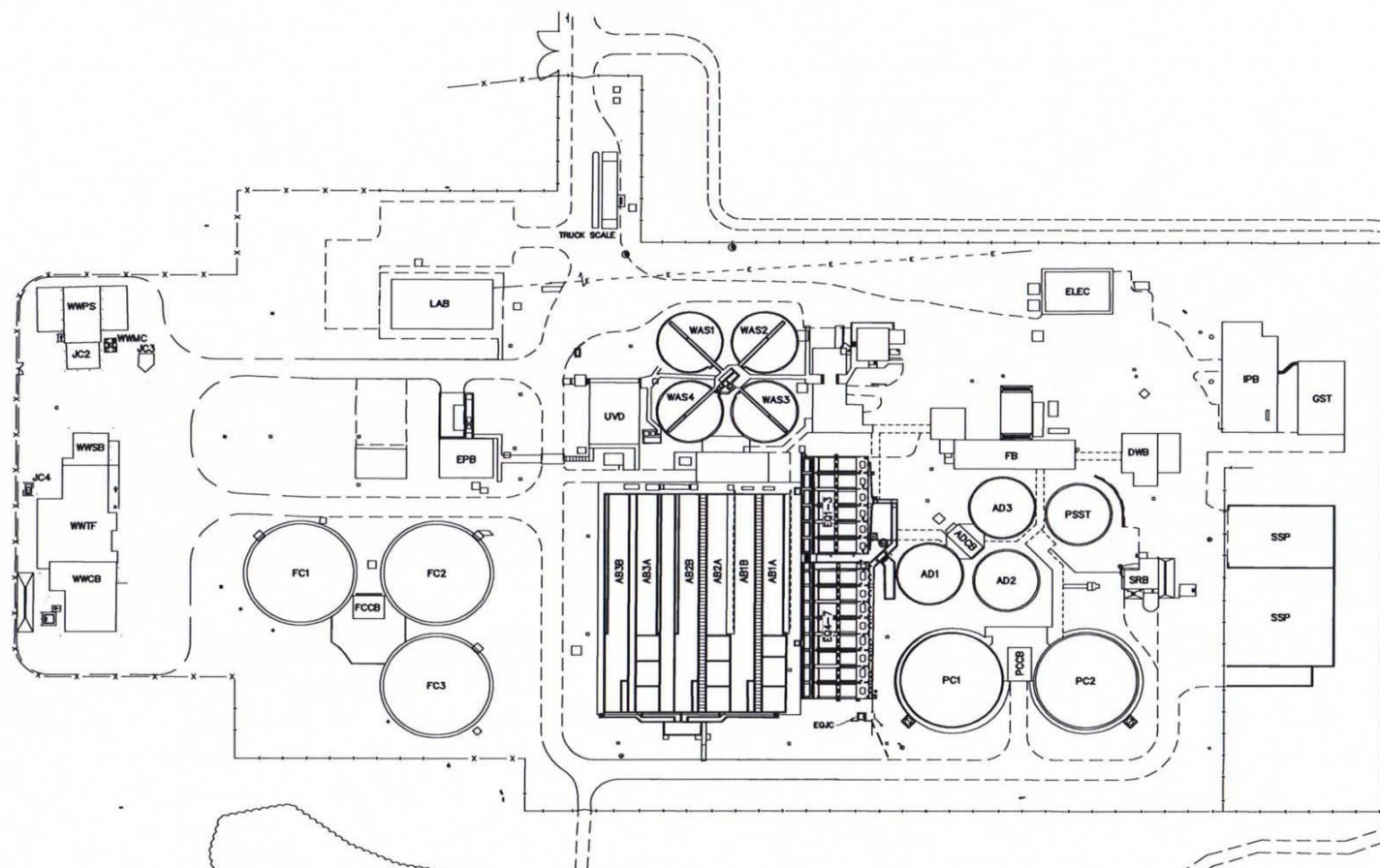
- **2013-2014:** Aeration blowers and diffusers were modernized for increased efficiency, reducing energy consumption while ensuring full treatment capacity during generator operation.
- **2017:** A solar array was installed to provide renewable energy for the plant.
- **2020:** The Anaerobic Digesters project was completed, replacing lids with concrete covers and installing new heating, mixing, and electrical systems. These improvements enhance waste reduction while optimizing the reuse of nutrient-rich biosolids for land application on local farms.
- **2022:** The Ultraviolet (UV) Disinfection System was replaced after 24 seasons of operation. The new Trojan Signa unit requires 60% less electricity and is easier to maintain than its predecessor.

Through continuous investment in infrastructure and technology, the Newark Wastewater Treatment Plant remains committed to providing efficient, environmentally responsible service to the community.

The diagram below illustrates the wet stream and solids handling processes of the treatment plant:



The following diagram represents an actual plant overview:



Human Resources: To maintain a highly skilled and motivated workforce that is well-trained and informed to operate the plant efficiently and effectively.

Note: Years of Service as of 06/01/26

Position	Name	Years of Service
Chemist	Nancy Taylor Class III Water Reclamation Operator Class IV Lab Analyst	36.1
Instrumentation Technician	Jeff Krauskopf Class I Water Reclamation Operator	33.9
Maintenance Supervisor	Jay Fisher Class I Water Reclamation Operator	23.6
Laboratory Technician	Angela Reischman Class II Lab Analyst	21.5
Maintenance Mechanic/Operator	Fred Nance	15.5
Facilities Manager	Scott Knighton Class IV Water Reclamation Operator	13.7
Electro-Mech. Technician	Keith Doles	11.2
Assistant Facilities Manager	Eric Mitchell Class III Water Reclamation Operator Class II Water Operator	10.2
Operator	Chris Robison Class I Water Reclamation Operator Class I Water Operator	8.1
Operations Technician/Operator	Christopher Sims Class III Water Reclamation Operator	6.9
Operator	Colton Curry Class I Water Reclamation Operator	5.4
Operator	Gay Dornbirer Class I Water Reclamation Operator	4.9
Operations Technician/Operator	Ben Petersheim Class II Water Reclamation Operator	3.4
Operator	Jaden Blosser	1.7
Operator	Justin Seymour	0.6
Operator	Matthew Bender	0.3

Operations: To maximize the efficiency of the wastewater plant while achieving the highest level of treatment our facility can provide.



Trojan Signa UV Disinfection

In 2025, the treatment operation maintained full compliance in removing CBOD, ammonia, and suspended solids while successfully treating over 3.0 billion gallons of wastewater.

Our wastewater treatment plant employees are the backbone of our community's health and environmental sustainability. Their dedication, expertise, and tireless efforts ensure that our water systems operate efficiently, protecting public health and preserving natural resources. Through their hard work, they maintain complex treatment processes, respond to challenges with professionalism, and uphold the highest standards of safety and compliance. Their commitment to innovation and continuous improvement helps our facility run smoothly, meeting regulatory requirements while safeguarding the environment. We deeply appreciate their resilience, teamwork, and unwavering dedication to this critical service, which benefits every resident and business in our community.

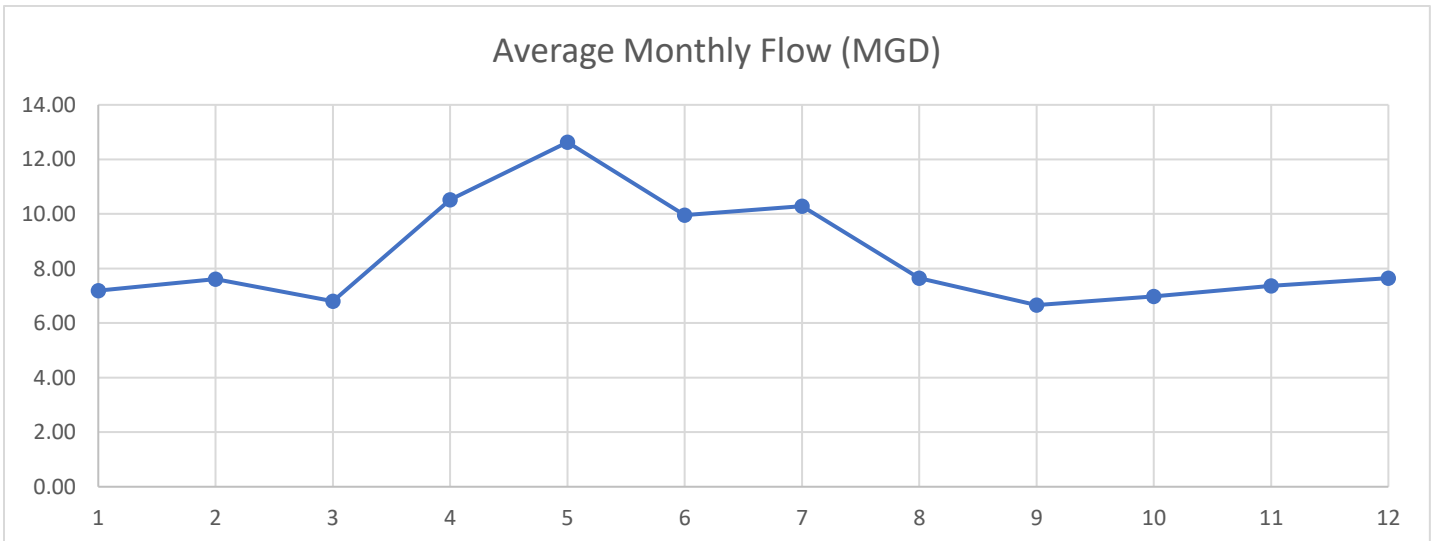
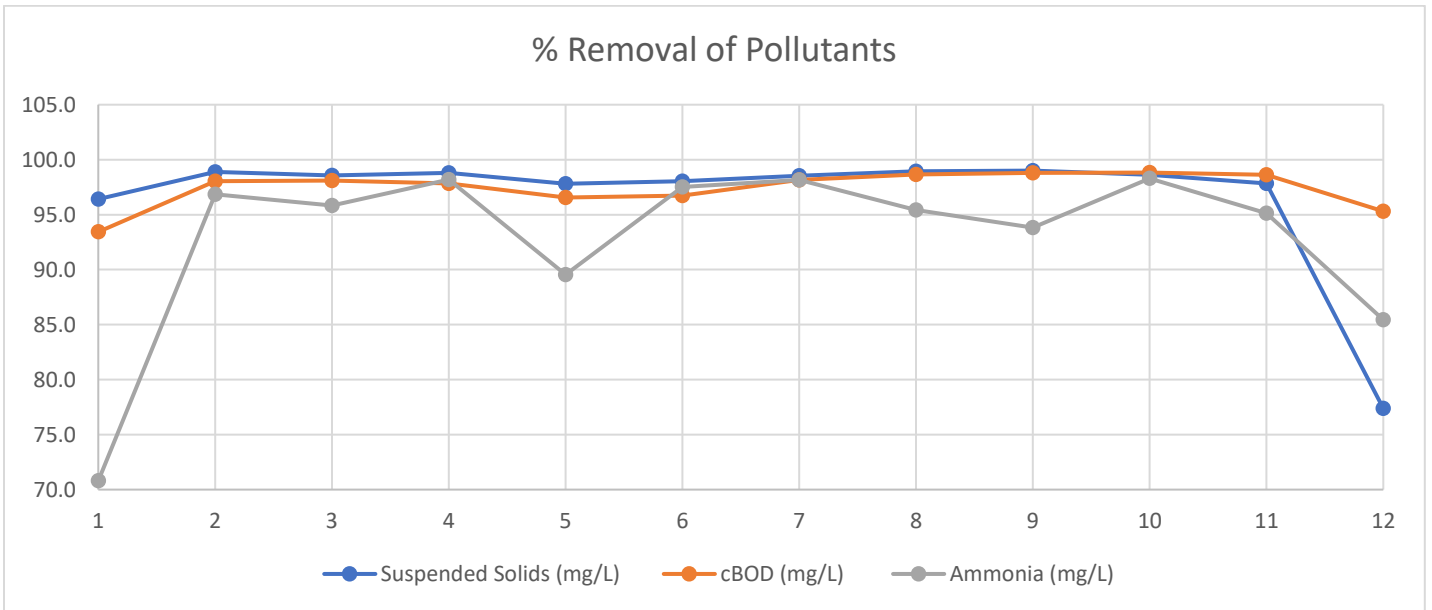
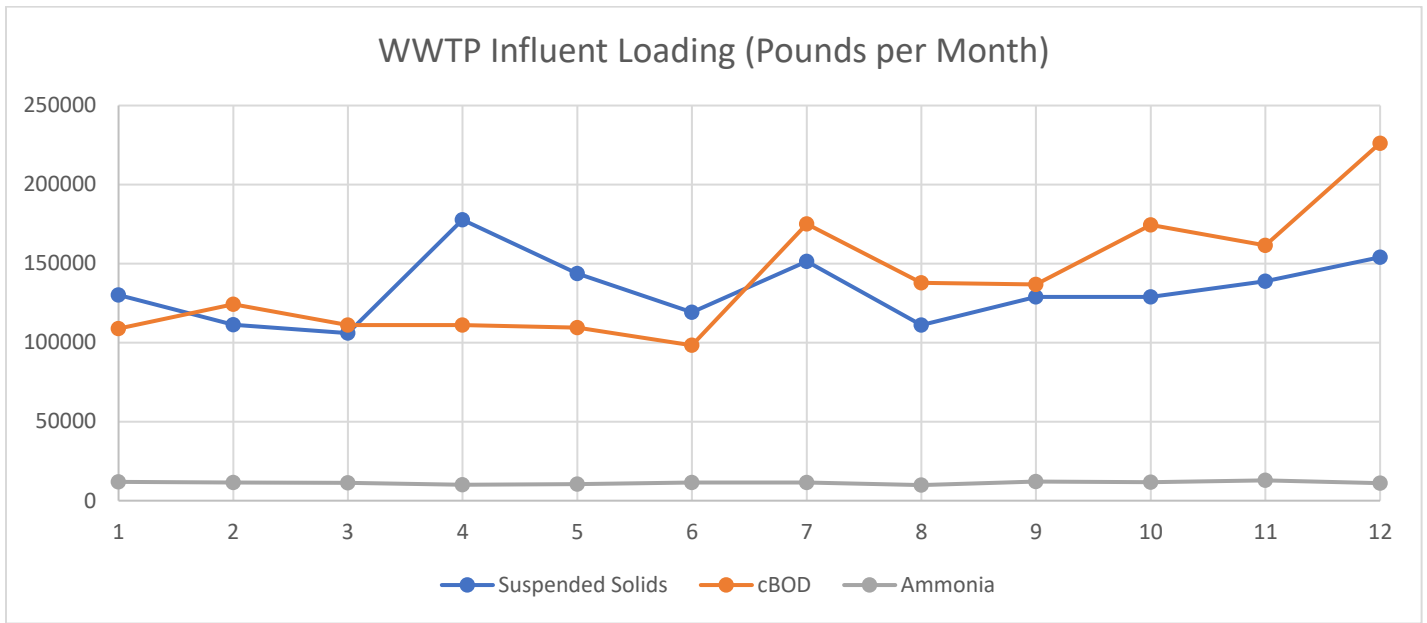


City of Newark Wastewater Treatment Plant—2025 Annual Report



	Effluent Flow Totalizer (MG)	Effluent Flow Daily Average (MGD)	Influent TSS (MG/L)	Settled TSS (MG/L)	Effluent TSS (MG/L)	TSS Removal (%)
January 2025	222.76	7.19	142	50	5.1	96.41
February 2025	213.00	7.61	160	45	1.8	98.88
March 2025	210.93	6.80	154	57	2.2	98.57
April 2025	315.48	10.52	167	36	2	98.80
May 2025	391.40	12.63	114	48	2.5	97.81
June 2025	298.89	9.96	118	34	2.3	98.05
July 2025	318.90	10.29	123	44	1.8	98.54
August 2025	237.07	7.65	142	69	1.5	98.94
September 2025	199.68	6.66	171	61	1.7	99.01
October 2025	216.34	6.98	183	78	2.5	98.63
November 2025	220.99	7.37	172	75	3.7	97.85
December 2025	237.10	7.65	218	89	49.3	77.39

	Influent cBOD (MG/L)	Settled cBOD (MG/L)	Effluent cBOD (MG/L)	cBOD Removal (%)	Influent Ammonia (MG/L)	Effluent Ammonia (MG/L)	Ammonia Removal (%)	F:M Ratio
January 2025	137	98	9.0	93.43	13.8	4.0	70.80	0.18
February 2025	164	83	3.2	98.05	14.9	0.5	96.85	0.06
March 2025	162	87	3.1	98.09	16.5	0.7	95.82	0.06
April 2025	116	42	2.5	97.84	10.5	0.2	98.19	0.04
May 2025	87	55	3.0	96.55	9	0.9	89.56	0.08
June 2025	98	51	3.2	96.73	11.7	0.3	97.52	0.08
July 2025	142	81	2.6	98.17	9.3	0.2	98.17	0.12
August 2025	179	113	2.4	98.66	12.7	0.6	95.43	0.11
September 2025	185	123	2.2	98.81	15.2	0.9	93.82	0.11
October 2025	247	159	2.9	98.83	15.8	0.3	98.29	0.12
November 2025	218	155	3.0	98.62	16.8	0.8	95.12	0.13
December 2025	318	211	14.9	95.31	15.8	2.3	85.44	0.16



Major Projects Completed in 2025

- Replaced one of the dewatering well pumps
- Repaired storage tank mixers #1 and #2
- Installed new grit transfer pump
- Installed new motor for influent pump #4
- Replaced failing breaker panel in tunnels
- Installed new air handling unit and exhaust fan for dewater building
- Installed new geothermal heating unit
- Rebuilt NPW auto strainer
- Repaired effluent building crane
- Replaced septic pit pump

Major Project Goals in 2026

- Fix counter weight on Final Clarifier #3
- Send in aeration diffusers for efficiency check
- Replace grinder pump at influent pump building
- Install new VFD for influent pump #4
- Repair mixer #7 in aeration basin
- Install radar level meters for continuous monitoring of sludge blanket depths
- Repair seals on RAS pump #1
- Upgrade hardware/software for SCADA system
- Repair drive assembly on dewater belt press #1
- Install ON/OFF timers for aeration basin mixers

Environmental Laboratory and Industrial Pretreatment Program

- *To provide accurate and timely data for plant operational control, industrial pretreatment monitoring and regulatory reporting*
- *To ensure industrial facilities discharging to the Newark WWTP comply with local, state and federal regulations designed to protect both the integrity of the wastewater treatment process and the biological integrity of the surface waters receiving the WWTP outfall*

Highlights of 2025

The Newark Environmental Lab continues to provide data for WWTP process control, provide industrial surveillance, monitor discharge of a defunct City Landfill on Watson Rd., and enable investigative studies of the collection system. In 2025, a total of 19,338 lab tests were performed in-house. The following shows sample type, and number of analyses (including replicates).

- Quality Control 4086
- Process Control 7404
- Industrials 6967
- River 181
- HRT 196
- Landfill 252
- Benchscale Digester 252

Per OEPA, the recommended Quality Control analysis rate should be at least 10%. The Newark Environmental Lab exceeded that benchmark by producing a QA/QC rate of 26.79%

DMR-QA Study 45

In 2025, the Newark Environmental Laboratory participated in USEPA’s DMR-QA Study 45. This mandatory laboratory proficiency study uses a single blind approach by sending participating laboratories samples of known value for various parameters. The Study Provider knows the value of each standard, but the participating laboratories do not know the value prior to analysis. After analysis, the labs submit the results for grading. A total of 31 parameters are required of the City of Newark based on pollutants listed in our NPDES permit. Analysis of the DMRQA samples occurs by the laboratory routinely responsible for each parameter reported to OEPA on the WWTP’s monthly operating report. Newark uses a combination of in-house testing as well as contract labs to compile all the monitoring required by our NPDES Permit. Parameters routinely analyzed in-house include: E. coli, Hexavalent Chromium, 5-day cBOD, Hardness, Total Dissolved Solids, Ammonia as Nitrogen, Orthophosphate as P, Total Phosphorus as P, Total Suspended Solids, Oil and Grease, and pH. Other parameters required by our NPDES permit include metals, biomonitoring, cyanide, and nitrates. This additional testing is performed by our contractors.

In 2025, all of the parameters required by the DMRQA Study, both in house and contracted, were graded as “acceptable” for accuracy.

Industrial Pretreatment Program

The Newark Environmental Lab analyzed 1,870 industrial samples for various parameters as part of the City of Newark’s Industrial Pretreatment Program. This Program is mandated by the Code of Federal Regulations, and is designed to protect the WWTP from toxicity that could be discharged from our industrial users. Toxic loads can kill off the bacteria used to treat wastewater at the WWTP, resulting discharge of untreated sewage to the Licking River.

Large industrial users can also discharge high amounts of treatable waste, so each industry that has a significant discharge to the City’s sewer is billed based on pounds of cBOD, Solids, and Ammonia that are present in their wastewater. This bill is in addition to the standard water and sewer bill that all customers pay based on cubic feet of water used. While these parameters are present in all wastewater, even residential sewage, industrial contributions that are higher than the residential “background” levels can increase the amount of money required to effectively treat these waste streams.

Generally speaking, increased cost translates into more electricity required to achieve effective aeration, as well as increased trucking costs to haul biosolids (the end product of treatment) offsite. By billing industries for the pounds of “high strength” wastewater each discharges, the City can recoup some of the cost of treatment in a fair and consistent manner. In 2025, \$637,969 was generated through Surveillance and Surcharge Fees to offset some of the increased cost of treatment.

Each industry is also charged a flat surveillance fee based on the number of times samples are collected at each facility. Frequent sampling of each significant industrial user helps to establish a waste profile of each industry’s “baseline” discharge. Any departures from baseline are usually detected promptly and appropriate action is taken before the WWTP experiences a problem.

Changes at the Industries

Tamarack has eliminated production of cultured products (yogurt, sour cream-based dips, and cottage cheese), and had added coffee creamer to its production line. This product required the construction of a specialized aseptic production line at the Newark facility that will also allow half and half, heavy whipping cream, and the Carbmater milk beverage to be manufactured locally.

Operating the new aseptic production line has presented Tamarack with significant challenges in the management of their wastewater. In late December, there was a vacuum line that failed to pull off steam from the aseptic process. This caused a very high cBOD slugload to enter Tamarack’s wastewater flow, and ultimately caused unusually fast DO depletion at the Newark WWTP. The higher than normal sucrose and vegetable oil concentrations in Tamarack’s wastewater caused accelerated population growth of the microflora in the WWTP aeration basins. The expanded population of bacteria and other microflora consumed much more dissolved oxygen than normal to sustain their metabolic processes, and the blowers at the WWTP had a difficult time keeping up with the demand. Tamarack stopped wastewater discharge of the slugload as soon as they were notified, however the Newark WWTP struggled to keep enough dissolved oxygen in our aeration basins from December 17th to December 19th.

PCA continued with construction of a new facility on Thornwood Drive that is substantially larger than the current location on N. 21st St. Production at the new facility is scheduled to begin mid-2026. PCA will be switching to low-metal inks once they relocate.

International Paper has downsized the Newark location, and the only production equipment that remains are a corrugator and one fan-fold box press/cutter. All other box production lines have been removed.

Staffing Changes at WWTP Environmental Lab

Ben Petersheim has become our second Operations Technician, and is in the process of learning Sample Collection, Laboratory Techniques, and other various duties that he will be managing in his new job.

2025 Completed Project List

- Continued gathering data for the Master Plan Project. Additional samples include Phosphorus (total and ortho), COD, Ammonia, and cBOD analyses of Plant Influent, Primary Clarifier Effluent, Plant Effluent, Thickener Belt Recycle, and Press Dewater Recycle wastestreams
- Continued employee training
- Continued inventory control program
- Identified other laboratory equipment that will be replaced as funds become available
- Began using IDEXX MPN method for E. coli analysis
- Trained a second Operations Technician on sample collection, laboratory analysis, and other Operations Technicians duties

Goals for 2026

- Begin SOUR testing for toxicity on trucked waste
- Begin filament identification and microlife counts on “B” side of aeration basins
- Remove outdated equipment from AA room, clean walls, replace ceiling tiles, etc. to transform room to an office
- Dispose of more hazardous chemical waste generated from lab operation, including FAA source lamps
- Update lab calendar to reflect requirements of new NPDES permit
- Prepare for background testing required for Technical Justification Study required by NPDES permit
- Write new Industrial Discharge Permits to reflect updated wasteload allocations
- Continue employee training, inventory control program, and equipment replacement plan
- Continue updating SOPs, benchsheets and Quality Assurance Plan as needed
- Update Pretreatment Enforcement Plan
- Update sections of the Sewer Use Ordinance for July 2026 legislation
- Re-start FOG inspection program

Final Comments from the Facilities Manager:

This past year, we successfully completed numerous upgrades to the treatment plant while also maintaining our existing equipment. In the year ahead, we remain committed to upholding the high standards we have come to expect, while also preparing for the anticipated growth in our region. The dedication of the Wastewater Treatment staff ensures that clean, recreational water is returned to the Licking River.

Why do we invest so much time and effort in treating used water? After all, isn't water abundant? While three-quarters of the Earth's surface is covered by water, only 3% of it is freshwater. To make matters even more concerning, 77% of that freshwater is locked away in polar ice caps and glaciers, while another 22% exists as groundwater. This means that only a tiny fraction of the world's water is readily available for human use. We cannot afford to treat water as an infinite resource—it is a finite, precious necessity that requires careful stewardship.

Through the proper operation of its wastewater treatment plant, the City of Newark plays a small but vital role in safeguarding the nation's water supply. Preventing pollutants from entering local waterways helps protect water quality for both current and future generations. We must never take this invaluable resource for granted. As we move forward, our commitment to protecting and preserving water remains steadfast. The employees of the City of Newark Wastewater Treatment Plant can take pride in their achievements in 2025 and look ahead to the challenges and opportunities of preserving our water resources in 2026.

-Scott Knighton

Wastewater Facilities Manager

