



FAQ: On-Site Wastewater Collection & Treatment

March 31, 2023

Protection of all water sources is a priority at Modern Landfill. The landfill's disposal area is designed, engineered, and constructed to remove liquid generated from within the disposed waste and transfer it to an on-site facility for treatment. **The entire treatment process is highly monitored and strictly regulated.**

Modern Landfill is nearly 50 years old. Is it engineered to handle waste and wastewater?

Modern Landfill is highly engineered to provide safe and environmentally responsible waste disposal services each and every day. All waste is disposed of within the boundary of a constructed landfill area with a non-permeable lined base that has been engineered to protect the environment and meet or exceed all local, state and federal regulations. Sophisticated safety equipment helps to monitor 78 individual groundwater monitoring wells and engineered leachate collection system. Safety and regulatory compliance are priorities throughout our operations — and science and technology play a major role.

What is landfill leachate?

Leachate is any liquid that, in the course of passing through matter, extracts soluble or suspended solids, or any other component of the material through which it has passed. The generation of leachate is caused principally by precipitation percolating through waste deposited in a landfill. The leachate is collected and transferred to an on-site facility for treatment and disposal. Modern Landfill has been treating wastewater at a permitted on-site facility since 1988, and regulatory oversight is rigorous.

Where does Modern Landfill discharge its treated leachate?

Modern Landfill legally discharges treated effluent from its on-site leachate treatment plant into Kreutz Creek under a National Pollution Discharge Elimination System (NPDES) permit, which was last authorized and approved in 2017. Renewal of that permit with stricter requirements is under review by the state Department of Environmental Protection (DEP).

Is the discharge monitored or tested to ensure compliance?

Modern Landfill's treated effluent is monitored regularly, with samples analyzed by an independent laboratory, and results provided to DEP each month. As with any point source with an NPDES permit, when levels of any parameters are detected above permit limits, Modern Landfill undertakes efforts to determine the cause and implement measures to remedy those conditions.

Why is Modern Landfill under a consent order with DEP?

Modern Landfill had been working cooperatively for years with DEP to identify and engineer upgrades to the plant and to develop a mutually acceptable schedule for the permitting, construction, and operation of those improvements. On Aug. 25, 2020, DEP and the landfill signed a Consent Order and Agreement (COA) that established a schedule for the plant upgrades to meet increasingly stringent discharge limits under the current NPDES permit and any new or additional limits that might be imposed under the renewed NPDES permit. In September 2021, DEP approved Modern Landfill's water quality management (WQM) permit, which authorized the upgrades to move forward. This process is common for massive infrastructure projects such as this one. Modern Landfill is fully compliant with the consent agreement.

What is Modern Landfill doing to its on-site wastewater treatment plant?

Modern Landfill's leachate treatment plant has been operating for several decades and has undergone a number of significant upgrades and modifications over the years to improve performance, adjust to changes in leachate characteristics, and comply with increasingly stringent discharge limits under its state-issued NPDES permit. Even today, the existing leachate treatment plant requires physical upgrades to consistently operate more efficiently and to meet new discharge standards being imposed by the state. To that end, Modern Landfill is investing \$23 million in upgrades. These upgrades include installation of massive water storage tanks and advanced reverse osmosis technology that will greatly enhance the plant's performance and enable the facility to meet new permit requirements.

What is the timeline for construction and operation of the new treatment plant?

Construction began in May 2022. Performance Construction Co., a Quandel Enterprises company from Pottsville, Pa., is performing the work, which is more than three-quarters finished. The new plant is scheduled to be operational in mid-2023. Everything is on schedule and advancing according to plan.

Will Modern Landfill's upgraded on-site treatment facility treat PFAS?

The newer, advanced treatment methods being installed at our state-of-the-art treatment plan are recognized as capable of treating PFAS.

What causes the fluctuation in color of leachate discharging into Kreutz Creek?

DEP has acknowledged that the observed color in the effluent "is most likely caused by the decomposition (or degradation) of naturally occurring matter contained in the leachate," like food waste and yard waste, which is typical in municipal waste landfills. The coloring, which at times can shade a varying degree of brown or reddish-brown, is similar to leaves left on a driveway; the longer the leaves weather on the driveway, the varying shade of the organic stain left behind.

Is the fluctuating color of leachate harmful?

The fluctuating color poses no harm to Kreutz Creek or to the environment or public health.

How is the color of the leachate regulated?

With respect to color, the landfill is operating in full compliance. The NPDES permit does not impose a specific color limit on discharge, but it does carry a color monitoring provision. The landfill is required to monitor the color of its effluent monthly at its point of discharge into Kreutz Creek and submit those results to DEP. Modern Landfill treatment plant upgrades include installation of a Reverse Osmosis system that will expand the plant's capabilities to reduce the color of the treated effluent.