

Martin State Airport

Dump Road Area Groundwater Treatment System Expansion



Community Bulletin

January 2025



Lockheed Martin has been successfully operating a groundwater treatment system at the Dump Road Area (DRA) of Martin State Airport in Middle River, Maryland since December 2017. The system treats volatile organic compounds (VOCs) in area groundwater and has prevented contaminated water from discharging into Frog Mortar Creek. Sixteen extraction wells have been pumping and treating water from along a 1,000-foot stretch of the airport shoreline at a rate of approximately 50 gallons per minute (gpm). This equates to over 150 million gallons of groundwater treated since startup, resulting in improved creek water quality and the lifting of a water contact advisory by the Maryland Department of the Environment (MDE) in December 2022.

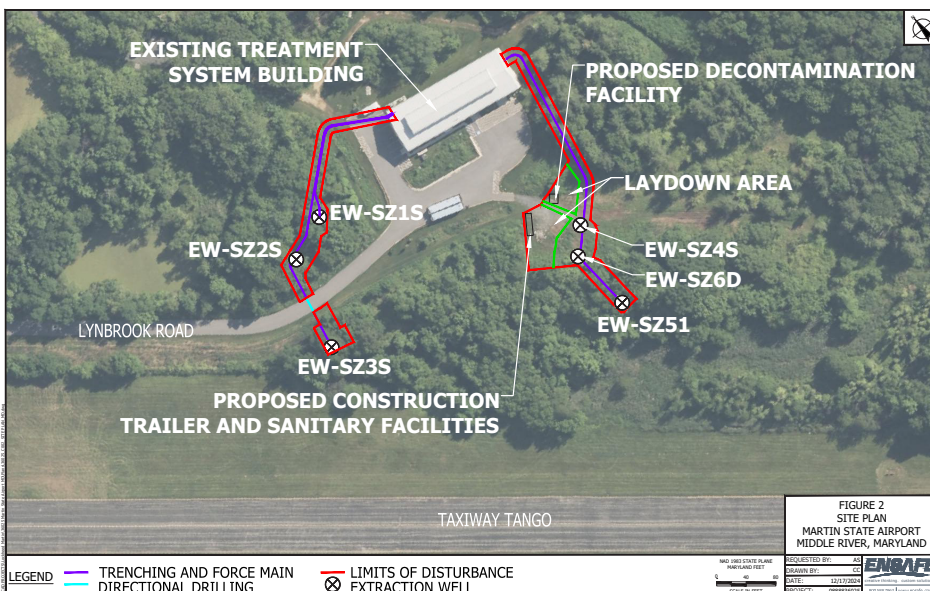
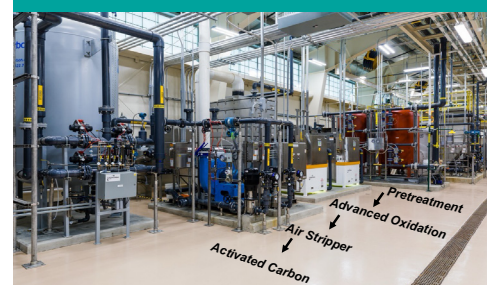
Despite the excellent performance of the current groundwater treatment system, Lockheed Martin designed and built it with the capacity to treat an increased volume of groundwater. In 2021, the company began designing a system of six additional extraction wells to be connected to the treatment plant. These new wells will pump groundwater with higher VOC levels (source areas) from areas upgradient of the current system. The six new extraction wells will increase the total flow through the treatment system by about 15 gpm or 20%.

The treatment system consists of four phases:

Pre-treatment: Metals settle in tanks and are dried into a cake using a filter press.

Advanced oxidation process (AOP) treatment: This uses ultraviolet light and hydrogen peroxide to destroy most VOCs in the groundwater.

Air-stripper and three 6,000 pound granular activated carbon units: These provide further treatment to remove any remaining VOCs in the groundwater after it goes through the AOP.



After securing all of the required permits, construction began in February 2024, with the following milestones:

**FEBRUARY
2024**

Ground clearance of extraction well and pipeline areas (removal of brush and select trees) and installed erosion control measures.



**MARCH
2024**

Drilled six test borings at new extraction well locations to collect groundwater and VOC data, leading to the final design of the extraction wells.



**APRIL-MAY
2024**

Installed well vaults and tested new extraction wells.



**JUNE-OCTOBER
2024**

Installed underground piping, power supply and electronic control panels; tested water quality in each well and conducted a formal two-week system startup test.





Map Document: (Pittsburgh)\GIS\GIS\Lockheed_MSA\MapDocs\APRX\sa_construction.aprx - SA Contr Presentation) 12/17/24 JULIE.ZAMUDIO

Lockheed Martin monitors VOC levels and water quality during the startup period and throughout the treatment process. Monitoring ensures that the system is effectively treating the new flow rate and higher VOC levels. The treated groundwater will be discharged via the existing underwater outfall close to the airport shoreline, in compliance with strict discharge limits under the treatment system’s National Pollutant Discharge Elimination System (NPDES) permit.

Lockheed Martin expects that the six new extraction wells will operate for a period of five years. The actual operational period will depend upon the VOC levels in the aquifer in 2029 and could be extended. The original 16 shoreline wells will continue to operate for the foreseeable future to ensure the long-term protection of water quality in Frog Mortar Creek.

As a permit requirement, Lockheed Martin will meet critical area mitigation obligations through the Critical Area Commission (CAC) by planting a quarter acre of new trees on a farm located in Baltimore County. This will offset the trees that had to be removed to make way for construction.

This source area construction project was a joint effort among Lockheed Martin, Maryland Department of the Environment, Maryland Aviation Administration and the Maryland Air National Guard. The team is pleased that the project was completed safely and without any impact to the local community. Lockheed Martin will continue our remediation efforts at Martin State Airport to ensure the site remains protective of human health and the environment.

Have questions or comments? Please contact:

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A detailed [fact sheet](#) is available on the Lockheed Martin website.

