

Middle River Complex and Martin State Airport Newsletter

Lockheed Martin
Corporation



June 2015

Lockheed Martin Middle River Complex
2323 Eastern Boulevard
Middle River, Maryland

Middle River

Cleanup of the Soil at the Middle River Complex has Begun

Cleanup of the soil at the Middle River Complex began in April. Lockheed Martin's contractors are removing more than 10,000 tons of soil (up to 500 truckloads), containing elevated concentrations of oil-related products and heavy metals from the five blocks of land that form a semi-circle within the southern half of the Middle River Complex.

The Blocks planned for cleanup this year are H, G, F, D and D Panhandle (see map). Block E will be remediated at a later time. Cleanup at Blocks A and B is complete and no further action is required. We expect to complete the

Middle River Complex soil cleanup project in about 6 months.

The cleanup follows approval by the Maryland Department of the Environment (MDE) of Remedial Action Plans (RAPs) developed by

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Layout of Middle River Complex

disposal at an approved land fill. Trucks are being inspected and, if necessary, cleaned before leaving each Block; for example, tires are being washed if necessary to prevent transport of dirt to local roadways. Each Block will have its own entrance, exit and inspection/cleaning area. When tire or other cleaning is necessary, all wash water is being collected, containerized and analyzed to determine the appropriate disposal. This water and any water that may come in contact with open excavations will be disposed of at a Lockheed Martin-approved

Trucks enroute to and returning from the recycling or disposal facilities are being routed so as to minimize use of residential streets. The primary truck route is direct exit to Eastern Boulevard by the Exxon Station, followed by Route 43 to Interstate 95. Alternately, trucks may use Martin Boulevard (Route 700) to Pulaski Highway (Route 40) and on to the Baltimore Beltway (Route 695).

Each excavation area will be sampled before being back filled with clean soil to ensure that all contaminated soil has been removed. With the exception of Block H, excavations may remain open for several days while

samples are being tested. Block H is an active parking lot with two areas of contamination. In order to keep the parking lot in service, the excavated holes will be filled with gravel while samples are being tested so that, if necessary, the holes can be more easily re-excavated to remove additional contaminated soil, after which the area will be paved. Because excavations will not stay open, Block H will not require erection of erosion and sediment control fencing, as will be necessary in the other Blocks.

Nine possible underground storage tanks have been identified in Blocks G and F, based on historical documents. Sites of possible underground storage tanks will be searched using ground-penetrating radar. If any tanks are found, they will be removed and disposed of following state

guidelines. Any soil containing oil and petroleum or other contaminants will also be removed and properly disposed.

Lockheed Martin will clean up the Block H area. The cleanup will be completed by the end of the fiscal year. The cleanup will be completed by the end of the fiscal year. The cleanup will be completed by the end of the fiscal year.

of parking lot No. 6. To support the soil cleanup effort, Lockheed Martin will also be replacing a small, collapsed storm drain at the corner of Block D and the Block D Panhandle.

“Beginning the soils cleanup work is a major step in the remediation of the Middle River Complex,” Tom Blackman, Lockheed Martin project lead, said in the Project Bulletin that was distributed when work began. “We’ve already begun groundwater cleanup, and this past winter began sediment cleanup. There’s still a lot to do, but at this point cleanup operations have begun in all our areas of concern.”

Planning for Block E Cleanup Continues

Soil cleanup beneath and surrounding former Building D in Block E is more complicated than in other Blocks: it is also the location where polychlorinated biphenyls, or PCBs, have been identified, so both the Maryland Department of the Environment (MDE) and the U.S. Environmental Protection Agency (EPA) are regulators for this portion of the site. At this time further investigations are underway, in particular to learn more about anomalies identified south of the building foundation and to collect additional data to support the design of the removal action. The anomalies may be material that requires removal or other cleanup actions. While the schedule remains fluid, Lockheed Martin anticipates designing cleanup plans and working with these two regulators and other permitting authorities from 2016 through 2018, with actual cleanup work likely to occur in 2019 or 2020.

Successful Sediment Removal at Outfall 005


In a sustained and focused initiative this past winter (2014-15) the Lockheed Martin team successfully removed high concentrations of polychlorinated biphenyls (PCBs) from sediments eight-to-ten feet beneath the water surface immediately adjacent to Outfall 005. The PCB contaminants were identified in the fall of 2013 when Lockheed Martin was taking samples in preparation for the overall cleanup of sediments in Cow Pen Creek and Dark

on-shore work area was cleaned and restored to pre-work conditions. Sediment samples taken after the work was completed confirmed the project's success.

A photo tour of the sediment removal project can be viewed at lockheedmartin.com/middleriver

Lockheed Martin's commitment to dredging without harming the environment was evident throughout the operation. Double, and in some places triple layers of silt curtains were placed in the water around the dredging site to ensure that stirred up sediment did not reach open water. Sediment dewatering pads were lined with plastic sheeting and a spill apron installed in the dredge of foading area to control water runoff. Calciment, a drying material, and Portland cement were mixed with the dredged spoil to absorb water and to help harden the dredged material to meet strength requirements of the licensed land fill.

"This project was an extraordinary effort on the part of all concerned, and reflects our commitment to doing things right," Tom Blackman, project lead for the Middle River remediation project.



Protection Agency and the Maryland Department of the Environment the plans for the removal and *in situ* treatment of the contaminated sediments and contingency plans for what the corporation will do if the *in situ* treatment plan does not achieve its cleanup goals. Environmental Protection Agency and Maryland Department of the Environment approval will come only after the work is complete and all cleanup goals have been met.

was removed from the food recipe. Lactate remains in the recipe, and while the solution moves more easily, it doesn't last as long as the lactate-vegetable oil solution. For that reason, the project team has decided to accelerate the follow-up injections into these areas; these will be completed later this year. The team is also now considering improving the effectiveness of the solution by adding naturally occurring bacteria to speed the degradation of the contaminants in the groundwater. Lockheed Martin will confirm this new approach with this summer's post-injection sampling.

The third planned treatment site is located at Block E, in an area just south of former Building D. During construction of the groundwater treatment system in Block E, an underground storage tank containing trichloroethene was found, as were concentrations of trichloroethene in the soil. These concentrations were too high to be handled adequately by the bioremediation treatment system alone. A temporary extraction system is being used to reduce the contaminant to a level that can be managed by bioremediation. This separate cleanup action uses groundwater pumps and a vacuum pump to extract groundwater and vapors, which are then treated.

The temporary treatment system consists of four groundwater extraction wells, one soil vapor extraction well, pumps and piping, a treatment system and two 21,000 gallon tanks that hold the treated water for testing to ensure it meets all standards, prior to its permitted discharge to the Baltimore County sewer system. Treated air is released to the atmosphere. The system uses an air stripper and activated carbon to treat the groundwater and activated carbon to treat the vapor. (See the Fall 2014 Middle River Complex Newsletter at lockheedmartin.com/middleriver for further background on Block E groundwater treatment.)

The temporary extraction system began operation late last summer (2014) and operated until winter, at which time it was shut down. With warmer spring temperatures, the system once again began operating and should complete its work by mid-summer 2015. At that time, bioremediation system installation in this area will be completed, the system tested, and then operated in a manner similar to the other two bioremediation treatment sites.

**For address change or undeliverable
mail return to:
Lockheed Martin Corporation
2940 University Parkway
Sarasota, FL 34243**

