

Project Summary Soil Cleanup Lockheed Martin Middle River Complex

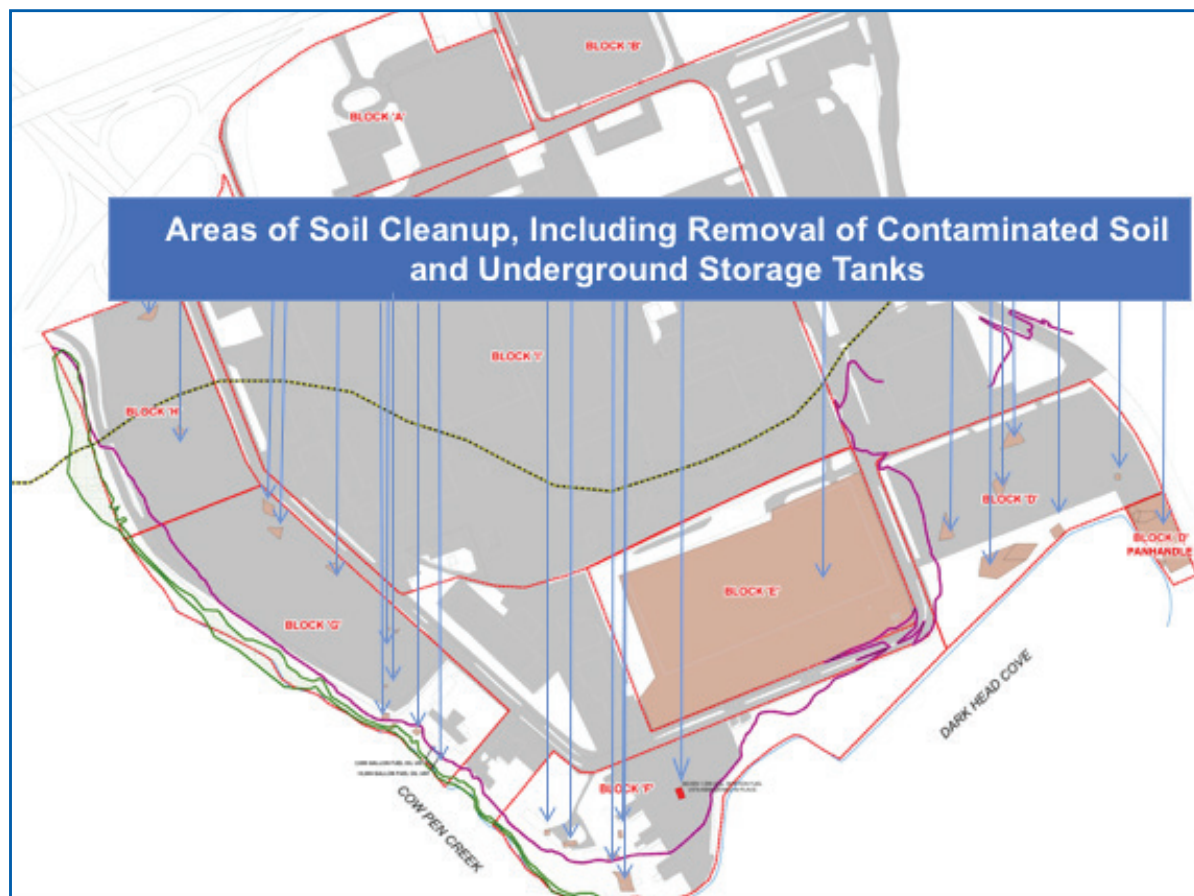
June 2018

Since the discovery of contaminated materials in soil at Martin Marietta Corporation's former airfield in Middle River in the late 1990s, Lockheed Martin has systematically investigated environmental conditions at the Middle River Complex, collecting samples to identify the location and extent of any contamination resulting from historical manufacturing operations at the site.

Over 5,100 samples collected from more than 1,200 soil-boring locations were tested to help define the extent of contamination in the soil. Using this information, Lockheed Martin developed plans for cleaning up the

contaminants. These plans were presented to Baltimore County leaders and the public, and to the Maryland Department of the Environment for approval. Once all approvals and permits were received by Lockheed Martin, cleanup of the soil began in early May 2015 and continued into Spring 2016. "No Further Action" letters and associated covenants were received from Maryland Department of the Environment (MDE) in October 2017, confirming cleanup commitments were achieved.

Soil was cleaned up by tax block designation in blocks lying to the west and south of the Middle River Complex



Areas of Soil Cleanup in each Block.



Erosion and sediment control fencing was erected around all work areas.

operating factory—Blocks H, G, F, D and D Panhandle. Block E will be cleaned up in a separate project at a later date. Blocks A and B were addressed previously. The first step in the project was installation of silt fencing for erosion and sediment control. This was especially important because portions of the Complex lie within the Chesapeake Bay Critical Area Buffer and Cow Pen Creek and Dark Head Cove border the blocks.

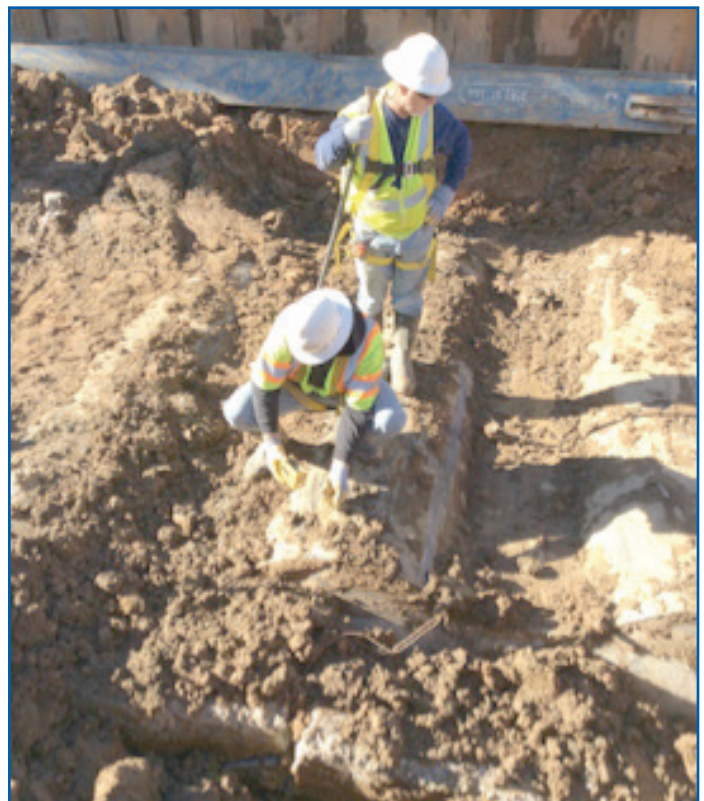
Each block presented its own cleanup challenges; here are some of the highlights of the work:

- Block H is primarily an active parking lot, which required excavation while it was in use by employees at the Middle River Complex.
- In Block G, soil was removed in seven areas in a former parking lot. An abandoned underground storage tank was located and removed from another area. An extensive search for electric transformers rumored to be buried in the block turned up only associated remnants; very small quantities of soil impacted by polychlorinated biphenyls (PCBs) were found. A silt curtain was installed at the edge of Cow Pen Creek to prevent the flow of sediments into the waterway during excavations along the shoreline, which turned up large quantities of rubble and debris, most likely from the foundation of a former building. Removal of other creek bank debris was delayed until the cleanup of sediments in Cow Pen Creek in 2017-18, when access was easier.



Soil excavations were typically about two-feet deep.

- Seven abandoned underground storage tanks were removed from beneath the concrete apron that was historically used for launching sea planes in Block F. Due to the depth of the tanks, removal involved constructing extensive shoring to provide safe access to the tanks. Also, four grassy areas in Block F were excavated.



Seven abandoned underground storage tanks were found in Block F.



Shoring was needed to safely access underground storage tanks in Block F.

- Digging in Block D revealed structural supports for the bulkhead bordering Dark Head Cove. One damaged support was repaired during soil cleanup. The storm drain near the bulkhead in the corner of Block D and Block D Panhandle, which had become compromised due to erosion, was also stabilized during cleanup. Excavation was conducted in eight areas of Block D/D Panhandle.
- While most excavations throughout the blocks were returned to original surface conditions, the Block D Panhandle surface was changed from asphalt to topsoil seeded with grass. That area was cleaned to recreational standards, while all other soil cleanup meets industrial standards.

Inclement weather during the cleanup was a particular problem, beginning with 15 inches of heavy rain that fell during June 2015 and delayed the work. The silt fences built around the work area effectively prevented loose soil from moving into Cow Pen Creek and Dark Head Cove. These controls were routinely inspected by Baltimore County. Runoff from heavy rains filled some of the excavations. This water was collected and transported offsite for disposal at a permitted facility. When possible, other storm water was diverted around work areas.

In all, 536 truckloads of soil were removed and replaced with clean soil, and 56 truckloads of concrete and



Stormwater was pumped from a swale.

asphalt were removed. All but 16 of the truckloads were recycled. Routes for trucks travelling to and from the site were discussed with the community before work began. No problems were reported. Reports summarizing the cleanup at each block were submitted to the Maryland Department of the Environment and MDE issued “no further action” closure documentation that stipulate certain environmental covenants addressing the property, which were recorded in the county land records.



D Panhandle was seeded with grass after asphalt was removed.