



Five-Year Review Begins in 2022

The next five-year review of the former Memphis Depot environmental cleanup actions will begin in 2022 to meet the required completion date of January 2023. The five-year review determines if cleanup actions for the Main Installation and Dunn Field are protective of human health and the environment. At the start of the review, the Army will request community input about the cleanup actions with a notice in the Commercial Appeal and by contacting local officials and former Restoration Advisory Board members. The community can leave comments on the Community Involvement Line (901-774-3683) at any time. When the five-year review is completed, the Army will place a notice in the Commercial Appeal and the final report will be available to the community on the Memphis Depot document website. The final report will also be available through TDEC's online document request process.

Depot Cleanup Program Documents Online

In September 2021, the Army created a website where the community can search and download former Memphis Depot environmental cleanup program documents by entering <https://www3.sam.usace.army.mil/DDMT> into an internet search program such as Google. The first two files on the website are the indexes for the Administrative Record and the Information Repository. Documents can be found by using the indexes or a key word search. Click on the document to view or download it. New documents will be added to the website semiannually.

Main Installation Groundwater Investigation Results

The Army finished the Main Installation Supplemental Remedial Investigation (SRI) for groundwater in 2019 and submitted the final SRI report to the U.S. Environmental Protection Agency (EPA) and Tennessee Department of Environment and Conservation (TDEC) in 2021.

In 2015, the Army began the SRI because long-term groundwater sampling results showed that contaminant levels in some Main Installation monitoring wells were not reduced by the cleanup action that ended in 2014. The SRI also looked at areas where groundwater contamination may be moving on to the Main Installation. The SRI, and the Feasibility Study currently in progress, are looking at changes to the cleanup action selected in the 2001 Main Installation Record of Decision.

During the SRI, the Army installed 55 groundwater monitoring wells, collected soil and groundwater samples, reviewed previous reports for groundwater

modeling and natural attenuation of groundwater contamination, and conducted a soil vapor extraction (SVE) pilot test. The SRI results improved the understanding of groundwater movement and the extent of groundwater contamination at the Main Installation. The SRI also confirmed movement of contamination on to the Main Installation at the northern and western property lines.

Because SVE was successful in removing contaminants and protecting groundwater on Dunn Field, the Army performed a pilot test to see if it was a possible cleanup action on the Main Installation. The Army collected vapor samples from three areas on the Main Installation. The area in the southeast Main Installation had the highest contaminant levels and was selected for the test. The test ran from August 2019 until May 2020. Almost 200 pounds of contaminants were removed and groundwater contaminant levels were

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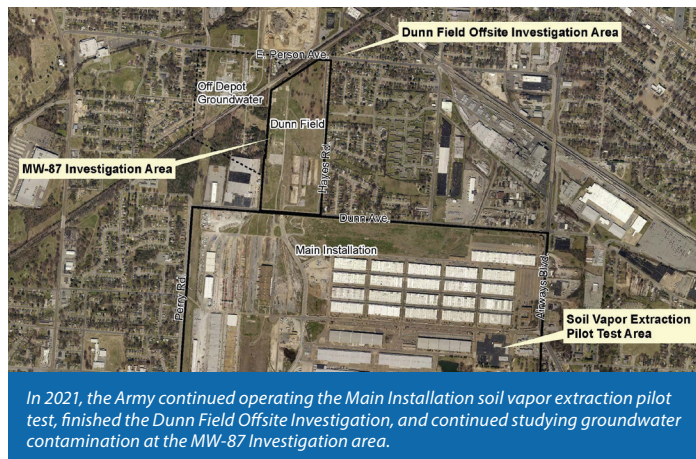
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reduced. SVE was confirmed to be an effective cleanup method where high levels of chlorinated volatile organic compounds are found in soil vapor. The Army conducted an extension of the pilot test from May to October 2021 to gather more information and to further reduce contamination in that area before the next stage of cleanup actions.

The Feasibility Study is using the SRI results to review potential cleanup actions and will suggest changes to the selected groundwater cleanup action in the Main Installation Record of Decision. The suggested cleanup action must reduce groundwater contamination levels to the cleanup objectives within a reasonable amount of time and prevent groundwater contaminants at levels above the objectives moving into the deeper Memphis Aquifer. The Army will submit the Feasibility Study to EPA and TDEC for review by early 2022.

After the Feasibility Study is approved, the Army will prepare a revised cleanup strategy (Revised Proposed Plan) for public review and comment. After the public comment period, the Army

will prepare a new decision document, such as an Explanation of Significant Differences or a Record of Decision Amendment. The decision document along with the SRI and Feasibility Study reports will be available on the Depot document website.



Additional Sampling Planned at Main Installation

The Army is conducting risk assessment and a vapor intrusion study on the Main Installation to support the upcoming five-year review.

The Army reviewed the Baseline Risk Assessment from the 2000 Main Installation Remedial Investigation report and provided results of their review to EPA and TDEC in a Human Health and Ecological Risk Assessment (HHERA). The HHERA confirmed that contaminant levels presented potentially unacceptable risks but that existing land use restrictions prevent contact with contaminants above cleanup levels. The restrictions require industrial land use except in the former housing area, prevent daycare facilities and prohibit water wells on the Main Installation and adjacent areas.

The review also found that additional soil, sediment and surface water samples should be collected and analyzed for specific contaminants to make sure the site conditions and land use restrictions are protective of human health and the environment.

EPA approved the HHERA on condition that the Army conduct additional review for some of their comments and prepare a plan for soil, sediment, and surface water sampling where questions remain. The Army prepared a Sampling and Analysis Plan to document the additional review, the sample locations and analytical methods. The plan was provided for EPA and TDEC review in August 2021.

In 2020, the Army met with EPA to discuss the vapor intrusion study next steps based on initial shallow soil vapor samples. They agreed that the Army would prepare a vapor intrusion conceptual site model to be followed by a vapor sampling plan. Army submitted the model for EPA and TDEC review in January 2021. The model describes site conditions on the Main Installation that influence vapor movement into buildings, includes a summary of initial site-wide screening samples for vapor intrusion, and suggests vapor sampling at buildings above contaminated groundwater.

The Army is preparing a Vapor Intrusion Sampling Plan while addressing EPA and TDEC comments on the conceptual site model. The sampling will show if soil vapor contaminants come from shallow soil contamination, rise from contaminated groundwater, or possibly both in some areas. Indoor air samples will find out if contaminant vapors are entering buildings and if contaminant levels are a human health risk.

Soil vapor sampling will take place in several phases with work planned to begin in 2022. The sampling plans and reports documenting the results will be available in the online Information Repository. See the EPA “What is Vapor Intrusion” fact sheet found online at www.epa.gov/vaporintrusion/what-vapor-intrusion for more information on how vapors can enter buildings.

Superfund Environmental Cleanup Process

Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA) Environmental Cleanup Process

Preliminary Investigation/ Site Assessment	National Priorities List	Remedial Investigation/ Feasibility Study	Record of Decision
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Former Memphis Depot’s Progress in the CERCLA Process

The former Memphis Depot is currently at the Post Construction stage. The environmental cleanup systems required by the Records of Decision have been constructed. Some cleanup actions are complete, and some cleanup systems are still operating. Other post construction activities include long-term monitoring and additional studies that may result in changes to the selected cleanup actions.

Investigation of Dunn Field Groundwater Continues

In 2020, the Army began the Dunn Field West Investigation to find why contaminant levels at monitoring well (MW)-87 were going up. MW-87 is near two areas where cleanup actions removed contaminants from soil and groundwater from 2007 to 2012. The cleanup actions lowered contaminant levels in MW-87 below the cleanup objectives required by the Dunn Field Record of Decision. Groundwater monitoring showed the contaminant levels at MW-87 began to go up in 2013.

The investigation conducted in 2020 and 2021 included soil, groundwater, and soil vapor sampling and human health risk assessment of the sample results. The results showed an area

of soil contamination outside the former cleanup areas. The risk assessment found there may be unacceptable human health risks if people had contact with contaminated soil, groundwater or soil vapor. Currently, people do not work on Dunn Field and the groundwater is not used for drinking water, so no one comes into contact with contaminated soil, groundwater, or soil vapor.

The Dunn Field West Investigation Report will provide recommendations for long-term protection of human health and the environment. Following review by EPA and TDEC, the report and human health risk assessment will be available to the community in the online Information Repository.

Dunn Field Offsite Groundwater Investigation Results

In July 2021, the Army collected the final groundwater samples for the offsite groundwater investigation in the area north and east of Dunn Field. Long-term groundwater monitoring showed contaminant levels in monitoring wells along the northern boundary of Dunn Field above the cleanup objective required by the Dunn Field Record of Decision. The Army's goal was to find out if there was an offsite source for the contamination.

In 2020, the Army installed nine monitoring wells to the north east of Dunn Field and collected groundwater samples. The new wells and the TDEC wells in the area were sampled every three months from October 2020 until July 2021. The groundwater sampling results provided evidence of an unidentified source north of Dunn Field that is causing groundwater contaminant levels on Dunn Field to remain above the cleanup objectives. Once reviewed by EPA and TDEC, the Offsite Groundwater Investigation Report will be available in the online Information Repository.

Planned Cleanup Activities 2022

- Complete the Five-Year Review and provide the report to EPA and TDEC for review
- Complete the Main Installation Sampling and Analysis Plan; conduct soil, sediment, and surface water sampling; and prepare the Risk Assessment
- Complete the Main Installation Feasibility Study
- Complete the Main Installation Revised Proposed Plan and provide the report to EPA and TDEC for review
- Complete the Main Installation Vapor Intrusion Sampling Plan
- Complete the Dunn Field West Investigation Report and the Finding of Suitability to Transfer 5, Amendment 2
- Continue operating and monitoring the Off Depot AS/SVE groundwater cleanup system
- Conduct Main Installation and Dunn Field Long-Term Groundwater Monitoring
- Conduct the Annual Land Use Controls Inspection

Definitions

Vapor Intrusion: The result of vapors from a contaminant source below ground moving up into a building.

Risk Assessment: The process for evaluating the chance of harmful effects to human health or to ecological systems from exposure to an environmental stressor - any physical, chemical, or biological entity that can bring about a harmful effect in humans or ecosystems.

Five-Year Review: Document prepared to gauge the operation and performance of Superfund site cleanup actions to decide if they remain protective of human health and the environment.

Off Depot Groundwater Cleanup System Update

The Off Depot Air Sparge/Soil Vapor Extraction (AS/SVE) groundwater cleanup system, located near the intersection of Menager Rd. and Ragan St., has operated since 2009 to remove groundwater contaminants in the area west of Dunn Field. Five new air sparge wells were installed and connected to the cleanup system in 2020 to help complete the groundwater cleanup action. The Army expects to reach the cleanup objectives in the Dunn Field Record of Decision and turn off the cleanup system in August 2022. Groundwater monitoring over the next year will determine if the system can be removed. The Off Depot AS/SVE Annual Operations Report is available online in the Information Repository.

Remedial Design/
Remedial Action

Construction
Complete

Post Construction
Complete

Site
Deletion

Post construction activities will continue until the cleanup objectives are met. The 2022 Site Management Plan estimates cleanup actions and monitoring will be completed in 2030.



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New Documents

- MW-87 Area Work Plan and Addendum
- 2020 Supplemental Remedial Investigation Report
- Site Management Team Monthly Call Summaries
- 2020 Community Involvement Plan
- Groundwater Conceptual Site Model Technical Memorandum
- Off Depot Air Sparge/Soil Vapor Extraction Year 8 and Year 9 Annual Operations Reports

How to reach us...

If you have any questions or comments about the former Memphis Depot's environmental cleanup program, please feel free to contact any one of the following:

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EnviroNews is published by the former Memphis Depot to update the public on the environmental cleanup program. If you have comments, questions, suggestions for future articles, or wish to be added to the mailing list please call and leave a message on the Community Involvement Line at (901) 774-3683.

