



Remedial Action Plan for Site 0153

Office of Land Quality

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Introduction

The 0153 Groundwater Contamination Site (Site 0153) is located in Indianapolis, Marion County, Indiana and consists of an area of the near northwest side that consists of mixed residential and commercial properties. Site 0153 is an area where historic manufacturing, commercial operations and dry cleaning have caused impacts to groundwater from industrial solvent chemicals in the vicinity of the Riverside and White River Municipal Wellfields (Wellfields). The Wellfields are operated as the public drinking water supply for the project area by Citizens Water (Citizens). Low levels of chlorinated volatile organic compounds (cVOCs) have been detected in untreated “raw” groundwater samples collected from certain water production wells. **The finished drinking water provided to customers by Citizens has always met, and continues to meet, all requirements of the Safe Drinking Water Act (SDWA).**

The Wellfields are in an urban, mixed-use area of the City where dozens of historic industrial facilities, which potentially used cVOCs as industrial chemicals, operated over the course of several decades. In order to address the impacts to the Wellfields, the Indiana Department of Environmental Management (IDEM) is managing potential individual sources within Site 0153 through one of IDEM's state remediation programs. Despite an exhaustive search for Potentially Responsible Parties (PRPs) that may have contributed to the contamination, a definitive source(s) of cVOCs impacting the Wellfields has not been identified to date. It is likely that several individual sources have contributed to a commingled groundwater plume which are, together, impacting the Wellfields. Individual PRPs have been, and will continue to be, responsible for conducting their own site investigations and remediation under directive and oversight from IDEM to address their potential cVOC contributions to the two Wellfields.

Recently, IDEM developed a [Remedial Investigation \(RI\)](#) documenting the results of several years of environmental investigation in the area to determine extent of groundwater impact, public exposure and health risk from the chemicals and potential sources of the chemicals. Building upon the RI, IDEM took those results and developed a [Human Health and Ecological Risk Assessment \(HHERA\)](#) to quantify the risk of health exposure to determine the need for cleanup or remedial action. That information was used to develop a [Feasibility Study \(FS\)](#) for proposed cleanup or remedial action to monitor or mitigate any health exposures. The RI, HHERA, and FS were provided to the United State Environmental Protection Agency (US EPA) and the public for comment.

Following completion of the RI, HHERA, and FS, and after receiving favorable feedback from stakeholders and the public, IDEM has developed the Remedial Action Plan (RAP) to present the Preferred Alternative for Site 0153 remedial action. The Preferred Alternative focuses on protecting the Wellfields to ensure the continued supply of safe drinking water, while other associated risks with respect to the individual sites (e.g., vapor intrusion) will be addressed on an individual basis through one of IDEM's remediation programs.

Preferred Alternative

The focus of the Preferred Alternative is most effectively and reliably achieved by providing provisions for continued monitoring and establishing production well head treatment options for raw groundwater exhibiting cVOC concentrations greater than the Maximum Contaminant Levels (MCLs) established by the US EPA. The Preferred Alternative involves all work necessary to prevent cVOC-impacted groundwater captured by the Wellfields from adversely affecting human health and the environment, including using engineering controls, such as aeration treatment or removal of wells from service, to prevent impacted groundwater above MCLs from entering the Citizens mixing and pre-treatment plant.

In addition to the Preferred Alternative, the RAP also includes provisions for funding for potential future response actions and community participation and outreach. IDEM will continue to work with and pursue PRPs through state remediation programs to investigate and remediate the various discrete and disparate sources of cVOC impacts within the five-year time of travel of the Wellfields. IDEM's continued efforts through remediation programs will ensure the cVOC impacts within Site 0153 continue to diminish while the Preferred Alternative provides protection of risks at the Wellfields and groundwater production wells now and into the future.

Based on the results of the FS and utilizing current information, aeration is the preferred remedial technology to address cVOC impacts to the Wellfields, should treatment become necessary in the future. Aeration treatment is a technology commonly used for the removal of VOCs, including cVOCs, from water. This method involves moving air through the contaminated water to volatilize and remove VOC contaminants from the water and transfer them to the air. Following aeration, the vapors are either collected and additionally treated or vented directly to the atmosphere, if contaminant concentrations are acceptable for discharge.

Remedial Action Plan

IDEM's Preferred Alternative includes the following elements:

- Remove from service any production well where untreated raw groundwater cVOC concentrations exceed an MCL and either:
 - Remain out of service until multiple resampling efforts, completed on separate occasions, have demonstrated that production well results are reliably and consistently below MCLs; or
 - Install treatment (e.g., aeration or similar) to reduce concentrations and complete confirmatory sampling of post-treatment water to ensure results are below MCLs before returning the well to service.
- Continue operation and maintenance of any aeration equipment installed until aeration is no longer necessary to ensure all untreated raw water in active wells is below MCLs.
- Continue routine Wellfield quarterly sampling of active production wells for cVOCs until monitoring has demonstrated that untreated raw water is below MCLs.

Additional measures that will be undertaken to further ensure continued protection of human health and the environment include the following:

- IDEM will enter into settlements with willing PRPs to create a settlement fund entitled "Site 0153 Monitoring and Future Response Fund (MAFR)". For the first 5 years, all settlement payments will be dedicated to funding future response actions within Site 0153, including:
 - Monitoring related to protecting Citizens production wells from cVOCs;
 - Collecting new evidence to determine whether cVOCs released from any PRP's facility threaten or impact any production wells in use within the Wellfields;
 - Funding or installing suitable water treatment equipment to remove any cVOCs from water extracted from Citizens' production wells; and
 - If both remediation and treatment are not cost effective, funding the relocation of any production wells as necessary to maintain use of the Wellfields or development of a new wellfield.
 - If the MAFR Fund is not needed for these purposes, in years six to ten, IDEM may begin spending the fund on IDEM oversight costs.
- IDEM will continue to work closely with the public, community organizations, governmental entities (including the City of Indianapolis and the Marion County Public Health Department (MCPHD)), and other stakeholders to ensure their continued involvement.
- IDEM and the MCPHD will continue to ensure that any private wells within Site 0153 meet MCLs, including sampling wells if requested by the property owner.
- IDEM will provide annual reports to the US EPA in accordance with the June 8, 2017 [Memorandum of Agreement](#) and will continue to maintain and update the [Site 0153 website](#) until the Site is de-proposed from the National Priorities List.
- Citizens will provide IDEM with routine updates regarding quarterly sampling results and annual rolling cVOC averages for operating production wells in the Wellfields for five years or until IDEM and Citizens agree that updates are no longer necessary.

Additional Information

For additional information on Site 0153, including an interactive map, factsheets, and to sign up to receive future communications, please visit IDEM's Site 0153 website at: www.IN.gov/idem/Site0153.

For questions and concerns, please contact IDEM's Office of Land Quality at (800) 451-6027 or by email at site0153@idem.IN.gov.