

Site Investigation Strategy
Site 0153 Plume (formerly Riverside Groundwater Contamination)
Indianapolis, IN
EPA ID# INN000510936

This document presents the Site Investigation Strategy (SIS) for the Site 0153 (formerly Riverside) groundwater contamination plume located in downtown Indianapolis, IN. The purpose of this document is to present the strategy for addressing the contamination present in the Riverside and White River wellfields, including: identifying Potentially Responsible Parties, delineating the nature and extent of contamination, determining the potential risk of the contamination and any completed exposure pathways, and selecting an appropriate remedial action to mitigate that risk or exposure.

Background

Site 0153 is located in Indianapolis, Marion County, Indiana. On February 20, 2013, IDEM staff received notice from Citizens Energy Group that elevated levels of vinyl chloride (VC) and cis-1,2-dichloroethene (cis-1,2-DCE) were being detected in their Riverside municipal wellfield. Citizens Energy was concerned that the increasing levels of VC in Well RS29 are approaching the Maximum Contaminant Levels (MCL) for VC, which may adversely impact the use of that well to supply drinking water to residents in Indianapolis. The MCL for VC is 2.0 µg/L. The Riverside/White River Wellfield supplies drinking water to over 17,000 people in Indianapolis.

On May 20 and 21, 2014, IDEM staff conducted a site inspection at the Riverside Groundwater Contamination site. A total of 25 raw water samples were obtained. The samples consisted of 19 ground water samples, four (4) duplicate samples, and two (2) trip blanks. The ground water samples were collected from 19 municipal wells located in the Riverside and White River Wellfields. All samples were analyzed for volatile organic compounds (VOCs) only. Vinyl chloride, cis-1,2-DCE, trichloroethylene (TCE), and 1,1,1 trichloroethane were the primary VOCs detected. Although VOCs were detected in some of the municipal wells, the concentrations of the VOCs did not exceed any MCL set by the EPA in raw water. All raw water is treated and tested by Citizens Water Utility prior to distribution and no VOCs have been detected in finished water sent to customers. Results of water system tests can be found on the State Drinking Water Information System (SDWIS) website at <https://myweb.in.gov/IDEM/DWW/index.jsp>.

The Hazard Ranking System (HRS) documentation record submitted to EPA currently has identified upwards of 89 potential sources of VOC contamination to the White River and Riverside Wellfields' five-year time of travel of groundwater. More than fifteen (15) sites are in one of IDEM's remediation programs, and have either addressed their potential sources or are on track to do so. For an illustration of the site area, including potential identified site sources, see Attachment A.

On August 13, 2015, IDEM's former Commissioner, Thomas Easterly, requested inclusion of the Site on the National Priorities List (NPL). However, IDEM has since determined it would be in the best interests of the site, and responsive to citizen requests, to address the site in IDEM's State Cleanup program. Commissioner Carol Comer sent a letter to EPA on August 18, 2016, formally withdrawing support for the Riverside Groundwater Contamination Site (now known as Site 0153) to be included on the NPL (Attachment B).

Path Forward

The Site exhibits unacceptable levels of groundwater contamination from multiple sources, and threatens municipal drinking water supplies. Additional information regarding the nature and extent of VOC contamination, any possible sources of contamination, and potentially completed exposure pathways must be collected. IDEM commits to following a CERCLA-like strategy to evaluate the contamination at Site 0153 as outlined below:

Preliminary Data Gathering/Conceptual Site Model Development

There are currently 15 potential contamination source sites in the Site 0153 five-year time of travel for groundwater that are in one of IDEM's remediation programs. The information collected for these sites to date is valuable to building a conceptual site model (CSM). IDEM staff will ask the programs for these sites to submit their most recent groundwater, soil, and vapor intrusion data sets as well as monitoring well construction data as electronic records to IDEM's SAMPDB sample database. IDEM's GIS section will use that information to build a site overview map and base conceptual site model. These sites will be asked to perform a data gap analysis to determine whether they need additional investigation and monitoring wells to evaluate potential contributions to the wellfield.

- **Immediate Impact Mitigation:**

As part of this preliminary data gathering activity, IDEM staff will determine whether any private drinking water wells exist within the five-year time of travel of groundwater to the Riverside and White River Wellfields, and if so, test those wells for VOC contamination. If shown to be contaminated, IDEM will devise a plan to ensure an alternate water source is provided.

PRP Search

Using the preliminary CSM as a guide, IDEM will conduct a comprehensive search for potentially responsible parties (PRPs) through all reasonably available records, and pursue all identifiable potentially responsible parties to obtain their cooperation in investigating and remediating Site 0153. IDEM staff will attempt to create a cooperative approach, wherein all identified PRPs work together to investigate both their own potential site-specific contamination issues as well as their potential contribution to the plume affecting the Riverside and White River wellfields (PRP Cooperative). IDEM staff will work with the responsible parties to develop a multi-party Agreed Order on Consent to

complete this work. If a site is identified but no Responsible Parties can be found, IDEM will undertake the work to address that site. Due to the density of sites and the nature of the contamination, there is a potential for commingled plumes. Other sources and responsible parties do not preclude delineation of on-site sources. IDEM will use all available enforcement authority to ensure all potentially responsible parties participate in this process.

Site Investigation

IDEM staff will take a tiered approach to understanding the nature of the contamination at Site 0153:

- Site-specific investigation of the nature and extent of impacts on individual properties will be completed by PRPs with oversight by IDEM project managers and Science Services staff, using the principles outlined in the Non-Rule Policy Documents “Remediation Closure Guide” and “Remediation Program Guide - State Cleanup Program” (Attachment C).
- Vicinity-wide evaluation of the entire project area, including understanding how the sites are connected, multiple plume behavior analysis, and identification of sources to the Riverside and White River Wellfield contamination will be undertaken by the PRP Cooperative, with oversight and input from the Lead IDEM Project Manager and Lead IDEM Geologist. The Lead Project Manager and Lead Geologist will review all site investigation work plans and reports to ensure each investigation is conducted with the overall goal of determining potential contribution to Site 0153 in mind.

Sampling on all sites will include soil, vapor, and groundwater samples. Initial samples will be analyzed for the full suite of potential contaminants in order to determine the correct list of contaminants of concern. Each site will be delineated horizontally and vertically until groundwater and soil impacts are below the RCG Residential Tap Water/Residential Soil standards. All sites must coordinate to gauge and sample wells on a regular basis. This information will be valuable to determining the potential source of contamination. Because of the toxicity of the contamination and the drinking water receptor, the delineation must be confirmed with repeatable groundwater data (wells). All data will be submitted to IDEM’s SAMPDB database.

Risk Assessment/Cleanup Goals

IDEM staff will evaluate all Site Investigation-generated data against the IDEM Residential standards for soil, groundwater, and soil vapor. Those standards are derived using EPA Region 5 standards and calculated to be protective at a level of 1×10^{-5} which is within the Superfund acceptable risk range of 1×10^{-6} to 1×10^{-4} .

Site Technical Decision Points

Once an individual site has been delineated to residential levels and all data and information has been submitted to the satisfaction of the site Project Manager, the site will be directed to mitigate any source areas, vapor intrusion, or other local, on-property impacts. This remedial decision, including all supporting information, conclusions, risk evaluations, and impact to local communities, will be detailed

in a Site Decision Document submitted to IDEM for review and approval by the Site Project Manager, Site Technical Staff, Lead Project Manager, Lead Geologist, and the State Cleanup Section Chief.

When the majority of sites have determined their nature and extent impacts and all data has been collected and evaluated, the PRP Cooperative, with comment from the IDEM Lead Project Manager and Lead Geologist, will draft a document that provides an overview of all relevant site-wide data and the conclusions regarding the nature of the groundwater contamination affecting the wellfields, all relevant source areas, and potential risk for future contamination to the wellfields. The PRP Cooperative will also draft a feasibility analysis of potential cleanup strategies that will protect the existing wells and reduce or eliminate impacts to the wellhead protection area.

Decision Document

IDEM staff will evaluate the results of the Site Investigation and Feasibility Analysis documents and will draft a Decision Document that will summarize the results of the investigations, risk evaluations, and feasibility analysis (including potential 30-year cost evaluations) of all potential cleanup actions for the Site 0153 plume. This document will evaluate the potential cleanup actions using the Superfund Nine Criteria, which include:

Threshold Criteria

1. Overall protection of human health and the environment
2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Primary Balancing Criteria

3. Long-term effectiveness and permanence
4. Reduction of toxicity, mobility or volume
5. Short-term effectiveness
6. Implementability
7. Cost

Modifying Criteria

8. State (EPA) acceptance
9. Community acceptance

The draft Decision Document will be presented to the public as a proposal at a public meeting, and any written or oral comments will be gathered and responded to before the Decision Document is signed by the Assistant Commissioner of the Office of Land Quality. The PRP Cooperative will also be presented a copy of the draft Decision Document and given the opportunity to comment.

Site 0153 Responsible Party Agreement

All parties/property owners that are shown to have a plume source or contributing areas will be asked to come to an agreement to fund the remedial action chosen in the Decision Document. This agreement will include each site's cost contribution and future financial assurances, as well as the structure of the

collective group's responsibility to implement the remedial action, the role of IDEM staff to approve remedial design and remedial action activities, and future operations and maintenance responsibilities.

Site 0153 Public Participation Plan

IDEM staff commit to holding at least a quarterly meeting in the Site 0153 area to update the public regarding progress at the site. In addition, links to publicly available site documents will be placed on the Site 0153 website. The documents will also be placed in an information repository that will be established in a local library or other public location. The draft site Decision Document will be presented to the public for input and comment before the document is final. IDEM staff are committed to communicating with the public in an open and transparent way in order to keep them informed of the site activities in their area. IDEM staff will also determine if any other methods of communication are preferred by the community and will revise this approach as necessary to ensure the needs of the community are being met. IDEM will ensure that both Spanish and English translations of outreach information are available. In addition, financial assistance to citizens groups to be able interpret any site-related technical documents will be made available either through PRPs or IDEM itself if no PRPs are identified.

Citizens Water Utility

Citizens Water has stated it would be willing to take the following measures to ensure the continued safety of its drinking water and to assist State and local governmental agencies with assessing and mitigating potential contaminant source areas in the vicinity of the Wellfields:

- Citizens would take production well WR-3 out of service, install an aeration treatment system to reduce VOC levels, and then test the water post-treatment to ensure VOC levels are below EPA's maximum contaminant limits (MCLs) for drinking water. Upon receipt of sustained satisfactory test results, Citizens would return WR-3 to service. At that point, all "raw water" being produced by Citizens' two production wells would be below EPA's standards before it is mixed with surface water and treated in Citizens' treatment process.
- Citizens would take the same measures at any production well in the future if verified sample results exceed MCLs, thus ensuring that water produced from Citizens' production wells, even before mixing and treatment, would continue to be below EPA Safe Drinking Water Act Maximum Contaminant Level (MCL) standards.
- Citizens would increase the frequency of its voluntary sampling for VOCs from the production wells and monitoring wells in the Wellfields from semi-annual to quarterly, and would share those results with IDEM as they are received.
- Citizens has developed and implemented Groundwater Quality Monitoring Plan, dated January 17, 2017 as required by a recently adopted Indianapolis/Marion County ordinance, to track CVOC concentrations in the Wellfields. The results of this sampling program will be shared with EPA, IDEM, and the four local agencies identified in the ordinance to help determine if further measures are warranted.

IDEM Commitments

IDEM understands that the nature and complexity of Site 0153 will require a large allocation of resources to complete successfully. Therefore, the Governor's Office and IDEM commit to hiring an additional three project managers, a geologist, and an attorney to be dedicated to the project. In addition, state funding has been secured in the amount of \$1 million per year to ensure work is completed in a timely manner.

IDEM staff believe this strategy will result in a complete and thorough evaluation of the contamination affecting the White River and Riverside wellfields, will be protective of human health and the environment, be responsive to the concerns expressed by local agencies, and will be acceptable to the citizens who live in the area.

List of Anticipated Deliverables

Site 0153 Remedial Investigation

A comprehensive evaluation of the nature and extent of contamination affecting the Riverside and White River Wellfields, including groundwater, soil, and vapor intrusion evaluations as well as source identification.

Site 0153 Risk Assessment

Evaluation of all data generated in the Remedial Investigation to determine if the site poses a risk to human health or the environment. This document will clarify contaminants of concern, compare concentrations against IDEM's Residential and Industrial closure values, and will determine the appropriate cleanup criteria for the site.

Site 0153 Feasibility Analysis

This document will determine potential remedies for any unacceptable risk associated with Site 0153. The document will also list potential Applicable or Relevant and Appropriate Requirements as well as cost evaluations for the potential remedies.

Site 0153 Decision Document

This document will summarize the results of the Remedial Investigation, the Risk Assessment, and the Feasibility studies, as well as summarize all ARARs for the site. The document will then outline the remedy preferred by IDEM and the PRPs. This document will be then made available in draft for public comment. All written public comments will be responded to as an addendum to the Decision Document.

Community Involvement Plan

This document will outline the ways in which IDEM intends to communicate with the public, including primary contacts, strategies for email and print communications, commitments to public meetings, location of a public information repository, how to find public records, availability sessions, and any other methods of communication and location of information relevant to the site. The public will be solicited for their input into this plan before it is drafted to ensure the plan meets the community's needs.