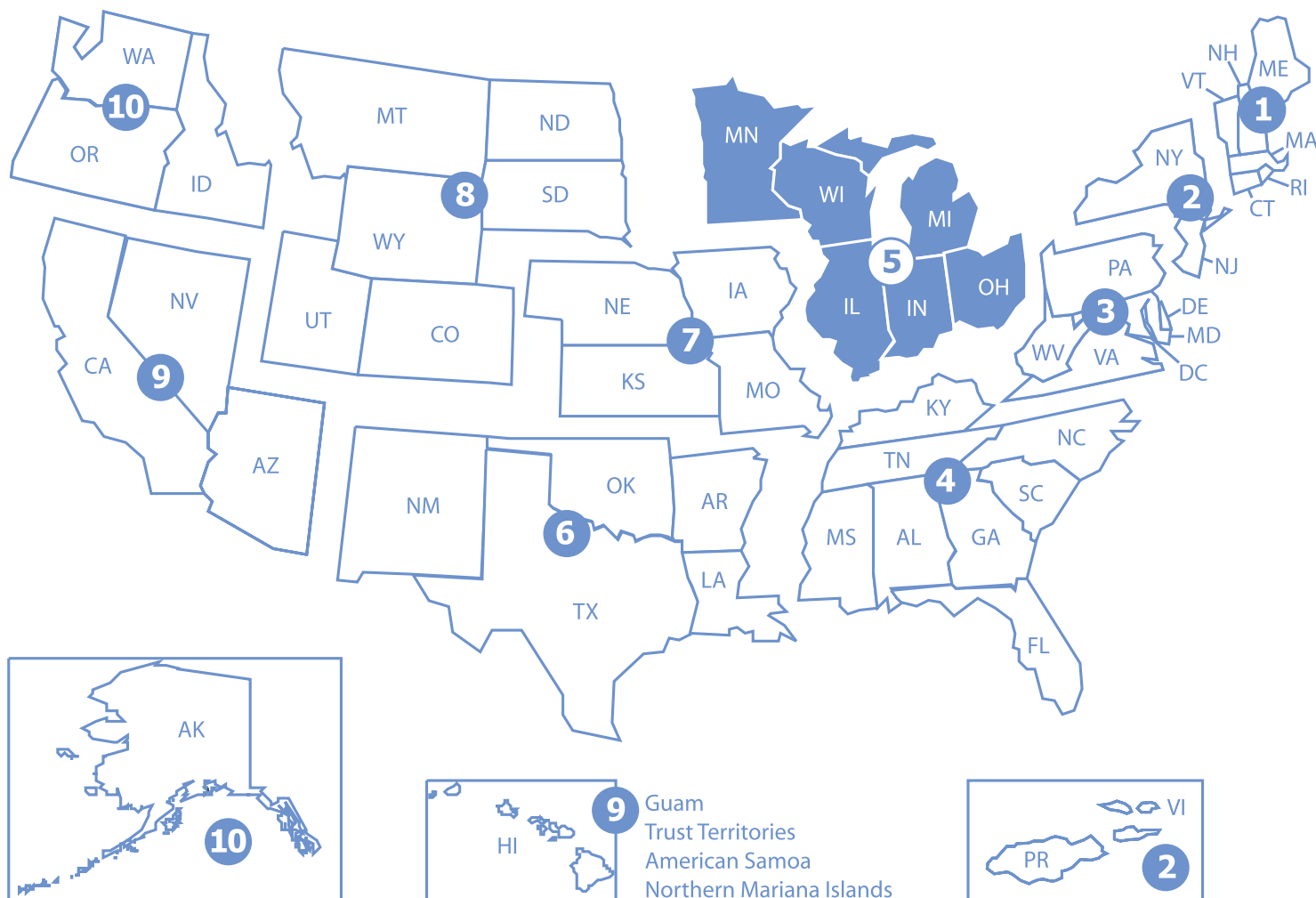




# Support Document for the Revised National Priorities List Final Rule – Broadway Street Corridor Groundwater Contamination



**Support Document for the  
Revised National Priorities List  
Final Rule  
Broadway Street Corridor Groundwater  
Contamination  
September 2018**

**Site Assessment and Remedy Decisions Branch  
Office of Superfund Remediation and Technology Innovation  
Office of Land and Emergency Management  
U.S. Environmental Protection Agency  
Washington, DC 20460**

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## **Executive Summary**

Section 105(a)(8)(B) of CERCLA, as amended by SARA, requires that the EPA prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. An original National Priorities List (NPL) was promulgated on September 8, 1983 (48 FR 40658). CERCLA requires that EPA update the list at least annually.

This document provides responses to public comments received on the Broadway Street Corridor Groundwater Contamination site, proposed on January 18, 2018 (83 FR 2576). This site is being added to the NPL based on an evaluation under EPA's Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in September 2018.

## Introduction

This document explains the rationale for adding the Broadway Street Corridor Groundwater Contamination site in Anderson, Indiana to the National Priorities List (NPL) of uncontrolled hazardous waste sites and provides responses to public comments received on this site listing proposal. The EPA proposed this site to the NPL on January 18, 2018 (83 FR 2576). This site is being added to the NPL based on an evaluation under the Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in September 2018.

## Background of the NPL

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Sections 9601 *et seq.* in response to the dangers of uncontrolled hazardous waste sites. CERCLA was amended on October 17, 1986, by the Superfund Amendments and Reauthorization Act (SARA), Public Law No. 99-499, stat., 1613 *et seq.* To implement CERCLA, EPA promulgated the revised National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, on July 16, 1982 (47 FR 31180), pursuant to CERCLA Section 105 and Executive Order 12316 (46 FR 42237, August 20, 1981). The NCP, further revised by EPA on September 16, 1985 (50 FR 37624) and November 20, 1985 (50 FR 47912), sets forth guidelines and procedures needed to respond under CERCLA to releases and threatened releases of hazardous substances, pollutants, or contaminants. On March 8, 1990 (55 FR 8666), EPA further revised the NCP in response to SARA.

Section 105(a)(8)(A) of CERCLA, as amended by SARA, requires that the NCP include

criteria for determining priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action and, to the extent practicable, take into account the potential urgency of such action, for the purpose of taking removal action.

Removal action involves cleanup or other actions that are taken in response to emergency conditions or on a short-term or temporary basis (CERCLA Section 101). Remedial action is generally long-term in nature and involves response actions that are consistent with a permanent remedy for a release (CERCLA Section 101). Criteria for placing sites on the NPL, which makes them eligible for remedial actions financed by the Trust Fund established under CERCLA, were included in the HRS. EPA promulgated the HRS as Appendix A of the NCP (47 FR 31219, July 16, 1982). On December 14, 1990 (56 FR 51532), EPA promulgated revisions to the HRS in response to SARA, and established the effective date for the HRS revisions as March 15, 1991. On January 9, 2017, EPA promulgated a further revision to the HRS that added a component for evaluating the threats posed by the intrusion of subsurface contamination into regularly occupied structures. These changes are consistent with, and comply with, the statutory requirements of SARA.

Section 105(a)(8)(B) of CERCLA, as amended, requires that the statutory criteria provided by the HRS be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. The list, which is Appendix B of the NCP, is the NPL.

An original NPL of 406 sites was promulgated on September 8, 1983 (48 FR 40658). At that time, an HRS score of 28.5 was established as the cutoff for listing because it yielded an initial NPL of at least 400 sites, as suggested by CERCLA. The NPL has been expanded several times since then, most recently on May 17, 2018 (83 FR 22859). The Agency also has published a number of proposed rulemakings to add sites to the NPL. The most recent proposal was on May 17, 2018 (83 FR 22918).

## Development of the NPL

The primary purpose of the NPL is stated in the legislative history of CERCLA (Report of the Committee on Environment and Public Works, Senate Report No. 96-848, 96th Cong., 2d Sess. 60 [1980]).

The priority list serves primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions. Inclusion of a facility or site on the list does not in itself reflect a judgment of the activities of its owner or operator, it does not require those persons to undertake any action, nor does it assign liability to any person. Subsequent government actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards.

The NPL, therefore, is primarily an informational and management tool. The identification of a site for the NPL is intended primarily to guide EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. The NPL also serves to notify the public of sites EPA believes warrant further investigation. Finally, listing a site may, to the extent potentially responsible parties are identifiable at the time of listing, serve as notice to such parties that the Agency may initiate CERCLA-financed remedial action.

CERCLA Section 105(a)(8)(B) directs EPA to list priority sites among the known releases or threatened release of hazardous substances, pollutants, or contaminants, and Section 105(a)(8)(A) directs EPA to consider certain enumerated and other appropriate factors in doing so. Thus, as a matter of policy, EPA has the discretion not to use CERCLA to respond to certain types of releases. Where other authorities exist, placing sites on the NPL for possible remedial action under CERCLA may not be appropriate. Therefore, EPA has chosen not to place certain types of sites on the NPL even though CERCLA does not exclude such action. If, however, the Agency later determines that sites not listed as a matter of policy are not being properly responded to, the Agency may consider placing them on the NPL.

## Hazard Ranking System

The HRS is the principle mechanism EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based screening system that uses information from initial, limited investigations -- the preliminary assessment and site inspection -- to assess the relative potential of sites to pose a threat to human health or the environment. HRS scores, however, do not determine the sequence in which EPA funds remedial response actions, because the information collected to develop HRS scores is not sufficient in itself to determine either the extent of contamination or the appropriate response for a particular site. Moreover, the sites with the highest scores do not necessarily come to the Agency's attention first, so that addressing sites strictly on the basis of ranking would in some cases require stopping work at sites where it was already underway. Thus, EPA relies on further, more detailed studies in the remedial investigation/feasibility study that typically follows listing.

The HRS uses a structured value analysis approach to scoring sites. This approach assigns numerical values to factors that relate to or indicate risk, based on conditions at the site. The factors are grouped into three categories. Each category has a maximum value. The categories are:

- likelihood that a site has released or has the potential to release hazardous substances into the environment;
- characteristics of the waste (e.g., toxicity and waste quantity); and
- targets (e.g., people or sensitive environments) affected by the release.

Under the HRS, four pathways can be scored for one or more components and threats as identified below:

- Ground Water Migration ( $S_{gw}$ )
  - population
- Surface Water Migration ( $S_{sw}$ )
 

The following threats are evaluated for two separate migration components, overland/flood migration and ground water to surface water.

  - drinking water
  - human food chain
  - sensitive environments
- Soil Exposure and Subsurface Intrusion ( $S_{sessi}$ )
  - Soil Exposure Component:
    - o resident population
    - o nearby population
  - Subsurface Intrusion Component
    - o population
- Air Migration ( $S_a$ )
  - population

After scores are calculated for one or more pathways according to prescribed guidelines, they are combined using the following root-mean-square equation to determine the overall site score ( $S$ ), which ranges from 0 to 100:

$$S = \sqrt{\frac{S_{gw}^2 + S_{sw}^2 + S_{sessi}^2 + S_a^2}{4}}$$

If all pathway scores are low, the HRS score is low. However, the HRS score can be relatively high even if only one pathway score is high. This is an important requirement for HRS scoring because some extremely dangerous sites pose threats through only one pathway. For example, buried leaking drums of hazardous substances can contaminate drinking water wells, but -- if the drums are buried deep enough and the substances not very volatile -- not surface water or air.

## Other Mechanisms for Listing

There are two mechanisms other than the HRS by which sites can be placed on the NPL. The first of these mechanisms, authorized by the NCP at 40 CFR 300.425(c)(2), allows each State and Territory to designate one site as its highest priority regardless of score. The last mechanism, authorized by the NCP at 40 CFR 300.425(c)(3), allows listing a site if it meets the following three requirements:

- Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service has issued a health advisory that recommends dissociation of individuals from the release;
- EPA determines the site poses a significant threat to public health; and
- EPA anticipates it will be more cost-effective to use its remedial authority than to use its emergency removal authority to respond to the site.

## Organization of this Document

The following section contains EPA responses to site-specific public comments received on the proposal of the Broadway Street Corridor Groundwater Contamination site on January 18, 2018 (83 FR 2576). The site discussion begins with a list of commenters, followed by a site description, a summary of comments, and Agency responses to each comment. A concluding statement indicates the effect of the comments on the HRS score for the site.

## Glossary

The following acronyms and abbreviations are used throughout the text:

|                    |                                                                                                                                                 |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Agency</b>      | U.S. Environmental Protection Agency                                                                                                            |
| <b>ATSDR</b>       | Agency for Toxic Substances and Disease Registry                                                                                                |
| <b>BMC</b>         | Benchmark concentration                                                                                                                         |
| <b>BMD</b>         | Benchmark dose                                                                                                                                  |
| <b>CERCLA</b>      | Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601 <i>et seq.</i> , also known as Superfund |
| <b>CFR</b>         | Code of Federal Regulations                                                                                                                     |
| <b>cis-1,2-DCE</b> | cis-1, 2-dichloroethene                                                                                                                         |
| <b>CLP</b>         | EPA Contract Laboratory Program                                                                                                                 |
| <b>CRQL</b>        | Contract-required quantitation limit                                                                                                            |
| <b>DL</b>          | Detection limit                                                                                                                                 |
| <b>EPA</b>         | U.S. Environmental Protection Agency                                                                                                            |
| <b>ESA</b>         | Environmental site assessment                                                                                                                   |
| <b>ESI</b>         | Expanded Site Inspection                                                                                                                        |
| <b>FR</b>          | Federal Register                                                                                                                                |
| <b>HRS</b>         | Hazard Ranking System, Appendix A of the NCP                                                                                                    |
| <b>HRS score</b>   | Overall site score calculated using the Hazard Ranking System; ranges from 0 to 100                                                             |
| <b>HWQ</b>         | Hazardous waste quantity                                                                                                                        |
| <b>IDEM</b>        | Indiana Department of Environmental Management                                                                                                  |
| <b>MCL</b>         | Maximum contaminant level                                                                                                                       |
| <b>MDL</b>         | Method detection limit                                                                                                                          |
| <b>µg/kg</b>       | Microgram per kilogram                                                                                                                          |
| <b>µg/L</b>        | Microgram per liter                                                                                                                             |
| <b>MW</b>          | Monitoring well                                                                                                                                 |
| <b>MWS</b>         | Municipal water supply                                                                                                                          |
| <b>NCP</b>         | National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300                                                            |
| <b>ng/L</b>        | Nanograms per liter                                                                                                                             |

|              |                                                 |
|--------------|-------------------------------------------------|
| <b>NPL</b>   | National Priorities List, Appendix B of the NCP |
| <b>PA</b>    | Preliminary Assessment                          |
| <b>PCE</b>   | Tetrachloroethylene                             |
| <b>PPB</b>   | Parts per billion                               |
| <b>PPM</b>   | Parts per million                               |
| <b>PPT</b>   | Parts per trillion                              |
| <b>PRP</b>   | Potentially responsible party                   |
| <b>PSW</b>   | Public supply well                              |
| <b>RfD</b>   | Reference dose                                  |
| <b>RI</b>    | Remedial investigation                          |
| <b>RI/FS</b> | Remedial Investigation/feasibility study        |
| <b>SARA</b>  | Superfund Amendments and Reauthorization Act    |
| <b>SCDM</b>  | Superfund Chemical Data Matrix                  |
| <b>SI</b>    | Site Inspection                                 |
| <b>SOW</b>   | Statement of work                               |
| <b>SQL</b>   | Sample quantitation limit                       |
| <b>TCE</b>   | Trichloroethylene                               |
| <b>TSCA</b>  | Toxic Substances Control Act                    |
| <b>VC</b>    | Vinyl chloride                                  |
| <b>VOC</b>   | Volatile organic compounds                      |

## 1. List of Commenters and Correspondence

|                            |                                                                                                                                                                       |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EPA-HQ-OLEM-2017-0605-0004 | Correspondence, dated April 21, 2017, submitted by Bruno L. Pigott, Commissioner, Indiana Department of Environmental Management, Indianapolis, Indiana.              |
| EPA-HQ-OLEM-2017-0605-0005 | Comment, dated January 30, 2018, submitted by an anonymous commenter.                                                                                                 |
| EPA-HQ-OLEM-2017-0605-0006 | Comment, dated February 12, 2018, submitted by an anonymous commenter.                                                                                                |
| EPA-HQ-OLEM-2017-0605-0007 | Comment, dated February 14, 2018, submitted by an anonymous commenter.                                                                                                |
| EPA-HQ-OLEM-2017-0605-0008 | Comment, dated February 21, 2018, submitted by an anonymous commenter.                                                                                                |
| EPA-HQ-OLEM-2017-0605-0009 | Comment, dated February 27, 2018, submitted by an anonymous commenter.                                                                                                |
| EPA-HQ-OLEM-2017-0605-0010 | Comment, dated February 27, 2018, submitted by an anonymous commenter.                                                                                                |
| EPA-HQ-OLEM-2017-0605-0011 | Comment, dated March 13, 2018, submitted by an anonymous commenter.                                                                                                   |
| EPA-HQ-OLEM-2017-0605-0012 | Comment, dated March 16, 2018, submitted by an anonymous commenter.                                                                                                   |
| EPA-HQ-OLEM-2017-0605-0013 | Comment, dated March 16, 2018, submitted by an anonymous commenter.                                                                                                   |
| EPA-HQ-OLEM-2017-0605-0014 | Comment, dated May 15, 2018, submitted by Thomas J. Broderick, Jr., Major, City of Anderson, Indiana, and Neal L. McKee, Director, City of Anderson Water Department. |

## 2. Site Description

The Broadway Street Corridor Groundwater Contamination site (the Site) is located in the vicinity of Anderson, Indiana and consists of three separate groundwater contamination plumes. The release being evaluated at the Broadway Street Corridor Groundwater Contamination site for HRS scoring is a release of chlorinated volatile organic compounds (VOCs) to an aquifer at three separate plume locations identified at three wells. The origin of the contamination in each plume is unknown. The contaminated groundwater plumes contain multiple chlorinated VOCs, primarily trichloroethylene (TCE), tetrachloroethylene (PCE), cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride. Three impacted municipal wells, Ranney well #1, Ranney well #4, and Ranney well #5 withdraw contaminated water from a single hydrologic unit composed of the aquifer systems referred to as the Bluffton/New-Castle/Tipton Complex Aquifer System, the White River and Tributaries Outwash Aquifer System,

and the Silurian and Devonian Carbonates Aquifer System. The contamination in the groundwater drawn by each of the three wells is defined as three separate sources for HRS purposes.

Analytical results of groundwater samples collected in 2014 documented VOC contamination in the hydrologic unit and are used to assign the HRS site score. Analytical results of raw groundwater samples from Ranney well #1 documented TCE at concentrations above the drinking water cancer risk screening concentration. Analytical results of raw groundwater samples from Ranney well #4 documented TCE and vinyl chloride at concentrations above the drinking water cancer risk screening concentration. Analytical results of raw groundwater samples from Ranney well #4 documented PCE at concentrations above the drinking water maximum contaminant level (MCL). The three impacted Ranney wells are among eight total municipal wells supplying water to the Wheeler Avenue Treatment Plant where the water is blended prior to distribution to the residents of Anderson. The Wheeler Avenue Treatment Plant is part of the Anderson Municipal Water Company. Of the 58,000 people served by Anderson Municipal Water Company, the blended water supplied from the Wheeler Avenue Treatment Plant serves a population of 34,800, and the population apportioned to the three impacted Ranney wells is 4,350 people per well.

Attribution of the significant increases in groundwater contamination levels in the three Ranney wells cannot be linked to any specific facility of origin utilizing only screening-level investigations due to the large number of facilities in the vicinity of the wells using VOCs in their operations. The three groundwater plume sources were placed in a combined listing because water from all three contaminated municipal wells is blended together at the Wheeler Avenue Treatment Plant before being distributed. Thus, the contamination from each plume affects the same population, and a combined listing will allow for more effective management of the risk posed by contamination and any remediation (if needed) of the contamination. Attachments 1 through 3 of the HRS documentation record at proposal demonstrate that each of the three individual plume sources defined by the contamination in Ranney wells #1, #4, and #5 would independently qualify for NPL listing if scored as three separate sites.

### **3. Summary of Comments**

The Broadway Street Corridor Groundwater Contamination site received one correspondence and ten comments. Nine of those comments, EPA-HQ-OLEM-2017-0605-0005 through EPA-HQ-OLEM-2017-0605-0013, were erroneous comments directed toward the incorrect docket.

Mr. Bruno L. Pigott, IDEM Commissioner, as authorized by Indiana Governor Eric J. Holcomb, expressed support for the designation of the Broadway Street Corridor Groundwater Contamination site on the NPL. Mr. Pigott stated that the Site requires a long-term response action and that the NPL would allow for proper and timely investigation into the nature and extent of contamination.

The Mayor of the City of Anderson, Mr. Thomas J. Broderick, Jr., and the Director of the City of Anderson's Water Department, Mr. Neal L. McKee, [herein referred to as the City of Anderson or the City] oppose the listing and provided comments discussed in Sections 3.2 through 3.10.3 of this support document.

The City commented that the Site does not pose any risk to citizens, and placing the Site on the NPL will do nothing to improve the community's drinking water. It asserted that the City of Anderson's drinking water supply is safe and a Superfund listing and CERCLA remedy are unnecessary to protect human health. The City commented that the listing focuses on raw water but the finished water delivered to the citizens of Anderson meets all state and federal applicable drinking water standards. It asserted that the raw water from Ranney wells #1, #4, and #5 are blended with five other wells which are non-detected for VOCs, and the finished water served to the residents are below the drinking water maximum contaminant level (MCL) for VOCs. The City claimed that the listing will needlessly alarm the citizens, stigmatize the city, and damage the economic fabric of the community.

The City also commented that the EPA has not identified the boundaries of the Site or the sources of the groundwater contamination, and therefore cannot quantify the risk posed by the site. The City commented that NPL listing “should not be a substitute for inadequate investigation and enforcement against” contributors to the groundwater contamination. Other specific comments by the City are that the amount of contamination in the aquifer is unknown; the VOC contamination in the aquifer is declining; the population served is not consuming water that fails to meet drinking water standards; drinking water MCLs are for finished drinking water, not raw water tested as part of the HRS evaluation; and five of the wells included in the HRS evaluation do not have detections of VOCs.

The City requested its comments be placed in the administrative record for the proposed rule.

### **3.1 Support for Listing**

Comment: Mr. Bruno L. Pigott, Commissioner of Indiana Department of Environmental Management (IDEM), also writing on behalf of Governor Eric J. Holcomb, submitted correspondence in support of placing the Broadway Street Corridor Groundwater Plume on the NPL. The Commissioner stated that the Site requires long-term response action and that the NPL listing will allow for proper and timely investigations into the nature and extent of the contamination of potential sources, as well as enable the EPA to determine cleanup alternatives to protect human health and the environment.

Response: The Broadway Street Corridor Groundwater Contamination site has been added to the NPL. Listing makes a site eligible for remedial action funding under CERCLA, and the EPA will examine the Site to determine what response, if any, is appropriate. The EPA will determine the need for using Superfund monies for remedial activities on a site-by-site basis, taking into account the NPL ranking, State priorities, further site investigation, other response alternatives, and other factors as appropriate.

### **3.2 Purpose of Listing**

Comment: The City questioned the purpose of placing this site on the NPL. It commented that placing the Site on the NPL will do nothing to improve the community’s drinking water. It asserted that Anderson’s drinking water supply is safe and a Superfund listing is unnecessary to protect human health. The City claimed that the EPA has relied heavily on the overly formalistic applications of the HRS that disregard the practicalities and realities of the situation. The City further claims listing the Site on the NPL would be arbitrary, capricious, irrational, an abuse of discretion, not in accordance with the law, and not supported by the facts, and added that “[t]his is not a high priority site.”

The City commented that no CERCLA remedy is required to protect human health and the environment. Per the City, the EPA has pursued similar NPL listings for blended surface water and groundwater supply systems in the past and the results have not generally been positive. The City stated that an example of this type of listing is the Fridley Commons Park Well Field Superfund site (EPA Facility ID MND985701309) where the EPA determined that no CERCLA remedy was required. The City concluded that the Fridley Commons Park Well Field example is significant because it is very similar to the Broadway Street Corridor Groundwater Contamination site and shows why this Site should not be listed.

Response: Placing the Site on the NPL is the appropriate initial step in the multi-step CERCLA Superfund process and it is not an announcement of any site-specific risk level or a determination of the need for remedial action. Listing a site reflects the EPA’s decision to inform the public of the possible threat posed by the site and at a later stage in the Superfund process the EPA will determine what, or if, remedial action is warranted. An HRS site score above 28.50 represents the EPA’s determination that the Site poses a relative risk as compared to other sites evaluated under the HRS and that the site warrants further investigation. The EPA’s action to list the Site are

consistent with the requirements of CERCLA and SARA, and the statutory purpose of the NPL, which is to inform the public of possible threats.

As the Courts have confirmed, the HRS is intended to be a "rough list" of prioritized hazardous sites; a "first step in a process—nothing more, nothing less." *Eagle Picher Indus. v. EPA*, 759 F.2d 922, 932 (D.C. Cir. 1985) (*Eagle Picher II*). The HRS is the mechanism used to evaluate the relative risk of a site. If a site scores a 28.50 or greater using the HRS, then it may be added to the NPL.

The purpose of NPL listing is explained in the *Federal Register* Notice of February 21, 1990 (Volume 55, Number 35) excerpted below.

The purpose of the NPL, therefore, is primarily to serve as an informational and management tool. The initial identification of a site for the NPL is intended primarily to guide EPA in determining which sites warrant further investigation to assess the nature and extent of the public health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. The NPL also serves to notify the public of sites EPA believes warrant further investigation.

The Broadway Street Corridor Groundwater Contamination site qualifies for addition to the NPL because it has achieved an HRS score of 28.50 or greater, as is demonstrated in the HRS documentation record. Achieving a site score of greater than 28.50 indicates that the site is eligible for inclusion on the NPL and therefore may warrant further investigation. Placing a site on the NPL allows EPA to more effectively prioritize sites, manage possible future site investigations, and notifies the public that the release at a site is of concern to the Agency. The addition of the Site to the NPL is an appropriate next step and this determination was made consistent with the purpose of the NPL and is supported by the HRS evaluation. All remediation decisions are determined at a later stage in the Superfund process and are not considered during the NPL evaluation.

Regarding the City's comments on the possible need for further actions that occur after a site is placed on the NPL, consistent with CERCLA, the EPA has in place an orderly procedure for identifying sites where releases of substances addressed under CERCLA have occurred or may occur, placing such sites on the NPL, evaluating the nature and extent of the threats at such sites, responding to those threats, and deleting sites from the NPL. The purpose of the initial two steps is to develop the NPL, which identifies for the States and the public those sites that appear to warrant remedial action (56 FR 35842, July 29, 1991). The evaluation or remedial investigation/feasibility study (RI/FS) phase involves on-site testing to assess the nature and extent of the public health and environmental risks associated with the site and to determine what CERCLA-funded remedial actions, if any, may be appropriate. After a period of public comment, the EPA responds to those threats by issuing a Record of Decision which selects the most appropriate alternative. The selected remedy is implemented during the remedial design/remedial action phase. Finally, the site may be deleted from the NPL when the EPA determines that no further response is appropriate.

Regarding the City's comparison of this Site to the Fridley Commons Park Well Field, determinations specific to the Broadway Street Corridor Groundwater Contamination site remediation will be made at a later stage of the Superfund process after a site-specific risk assessment has been performed. At the Fridley Commons Park Well Field site the EPA performed multiple investigations after the site was placed on the NPL -- consistent with the Superfund process. The information provided in Appendix B of the City's comments attests to the site-specific determinations made at the Fridley Commons Park Well Field site following listing; while the City commented that both sites are similar and should be treated similarly, these types of site-specific determinations are made at the appropriate time in the Superfund process, after listing.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.3 Extent of Contamination

Comment: The City stated that the HRS documentation record fails to identify the boundaries of the Site. The City also claims that the HRS documentation record exaggerates the extent of the contamination in the wellfield. According to the City, IDEM and the EPA concluded that three contamination plumes are affecting three drinking water wells: Ranney wells #1 and #4 in the Northern Area, and Ranney well #5 in the Southern Area and stated that there is no evidence that the same contamination plume is affecting all three wellfields.

The City stated that the site location is listed as the intersection of Broadway Street and Grand Avenue in Anderson, Indiana, but as demonstrated by supporting material, the Site includes two separate and distinct areas: one is to the north and includes Ranney wells #1 and #2 (the ‘Northern Area’); the other is to the south and includes Ranney wells #4 and #5, which are about a mile south of Ranney wells #1 and #2. The City further explained that the southern area is split in half, east-west by the White River, and the intersection of Broadway Street and Grand Avenue is very close to Ranney well #4, roughly in the center of the Southern Area.

The City stated that identifying numerous “sites” that ‘could’ be contributors does not add to the EPA’s understanding of the Site and does not help quantify risks, and added that the work necessary to find and pursue necessary sources should be performed. If necessary, individual sources could be placed on the NPL.

Response: The EPA has correctly delineated the Site and the Sources for HRS scoring purposes. The EPA has no reason to delay the listing of this site until the origin of each plume can be determined, and in fact, it would be inconsistent with CERCLA to do so.

A site, as defined by the HRS is:

Area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include the area between sources. (Section 1.1, *Definitions*, of the HRS (55 FR 51587, December 14, 1990, emphasis added).

A source as defined by the HRS is:

Any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance. Sources do not include those volumes of air, ground water, surface water, or surface water sediments that have become contaminated-by migration, except: in the case of either a ground water plume with no identified source or contaminated surface water sediments with no identified source, the plume or contaminated sediments may be considered a source.

#### Site Boundaries

The extent of the Broadway Street Corridor Groundwater Contamination site and the delineation of the three contaminated plume sources have been adequately established to demonstrate that the HRS site score is sufficient to place the site on the NPL. It is not necessary to establish precise site “boundaries” to perform an HRS evaluation, nor does CERCLA or the HRS require the boundaries of each of the three plumes comprising the Site sources be established at listing. The purpose of listing sites on the NPL is to identify releases that are priorities for further evaluation, not to identify the extent of a site (nor the extent of each source at a site). Defining the boundaries of the contaminated groundwater plume sources in precise geographical terms would require more information than is routinely available at the listing stage.

Placing a site on the NPL is based on an evaluation, in accordance with the HRS, of a release or threatened release of hazardous substances, pollutants, or contaminants. In this case, the releases being evaluated are the releases to

three combined groundwater aquifer systems that act as a single hydrologic unit, which has been contaminated and is being withdrawn by three public supply wells. However, that the EPA initially identifies and lists the release based on a review of the threat posed by the groundwater contamination identified at three well locations does not necessarily mean that the site boundary, or the three plumes, are limited to any particular part of the aquifer systems or any specific area.

CERCLA Section 105(a)(8)(A) requires the EPA to list national priorities among the known “releases or threatened releases” of hazardous substances; thus, the focus is on the release, not precisely delineated boundaries. Further, CERCLA Section 101(a) defines a “facility” as the “site” where a hazardous substance has been “deposited, stored, placed, or otherwise come to be located.” The “come to be located” language gives the EPA broad authority to clean up contamination when it has spread from the original source. On March 31, 1989 (54 FR 13298), the EPA stated:

HRS scoring and the subsequent listing of a release merely represent the initial [emphasis added] determination that a certain area may need to be addressed under CERCLA. Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will need to be refined and improved as more information is developed as to where the contamination has come to be located; this refining step generally comes during the RI/FS [remedial investigation/feasibility study] stage.

The revised HRS (55 FR 51587, December 14, 1990) elaborates on the “come to be located” language, defining “site” as “area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include the area between the sources.”

Until the site investigation process has been completed and a remedial action (if any) selected, the EPA can neither estimate the extent of contamination at the NPL site, nor describe the ultimate dimensions of the site. Even during a remedial action (e.g., the removal of buried waste) the EPA may find that the contamination has spread further than previously estimated, and the site definition may be correspondingly expanded. In addition, if another, unrelated area of contamination is discovered elsewhere on the property, the EPA may decide to evaluate that release for the NPL.

Regarding the City’s comment that the intersection of the Broadway Street and Grand Avenue is not the only location of the Site, the EPA agrees that this intersection is not the only location included in the Site and notes that this intersection was selected as an address for the site to inform the public as to the general location of the Site, not to represent boundaries or the areal extent of the Site. Further, the EPA does not agree that the site consists of two areas. The Site as proposed consists of the releases at three separate plume locations identified at Ranney well #1, Ranney well #4, and Ranney well #5. The EPA did not include Ranney well #2 as part of the site as this well location was used to establish background levels of VOCs. See Section 3.9, Releases to the Aquifer, of this support document for further discussion of Ranney well #2 in the HRS scoring of this Site.

### **Exaggeration of Site Boundaries**

Regarding the City’s claim that the EPA has exaggerated the site boundaries, the Site for HRS purposes consists of the areas that include the groundwater contamination located at three individual wells, Ranney well #1, Ranney well #4, and Ranney well #5. The EPA has not delineated the extent of the contaminant plumes outside of these three specific well locations because, as discussed above, it is neither appropriate nor necessary to do so at this stage of the Superfund process.

Regarding the City’s comment that identifying numerous possible contributors does not help quantify risks, and that the EPA should delay listing and perform the necessary work to identify source, the HRS is a screening tool that assesses the relative risk posed by sites -- sufficient investigations have been performed to qualify this site for

the NPL. See Sections 3.4, Delay Listing Until Further Investigations, 3.6, Risk to Human Health and the Environment, and 3.8.1, Source Characterization, of this support document for further discussion.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.4 Delay Listing Until Further Investigation

Comment: The City commented that the work necessary to find and pursue the individual sources contributing to the groundwater contamination should first be performed; then, if necessary, individual sources could be placed on the NPL. The City emphasized that placing the Site on the NPL should not be a substitute for inadequate investigation and enforcement against individual sites that may have contributed to groundwater contamination in the area. According to the City, the HRS documentation record concedes that IDEM has been unable to locate a source of the contamination found in the wellfields. The City also commented that each of these wells has its own separate wellhead protection area and draws from a different upgradient area containing multiple different possible sources and there is no evidence that the same contamination plume, let alone the same sources are affecting all three wellfields, or even both the Northern (Ranney wells #1 and #2) and Southern Areas (Ranney wells #4 and #5).

Response: Placing a site on the NPL is not delayed in order to allow identification of all sources contributing to the contamination, or for enforcement actions be carried out. Proceeding with the listing process need not inhibit these efforts if they are determined to be necessary at this Site. As stated in Section 3.2, Purpose of Listing, of this support document, the HRS is a screening tool and while the EPA would like to investigate each possible site completely and thoroughly prior to evaluating a site for proposal for NPL, it must reconcile the need for certainty before action with the need for inexpensive, expeditious procedures to identify potentially hazardous sites. Thus, consistent with CERCLA, the EPA has in place an orderly procedure for identifying sites where releases of substances addressed under CERCLA have occurred or may occur, placing such sites on the NPL, evaluating the nature and extent of the threats at such sites, responding to those threats, and deleting sites from the NPL.

The EPA makes decisions during all stages of the procedure. Potentially responsible parties (PRPs) can affect remedy selection, as can any other member of the public, through the public comment process. PRPs may undertake the RI/FS and/or remedial design/remedial action stages under EPA supervision and pursuant to appropriate agreements with governmental authorities (under enforcement authorities of CERCLA or those of other statutes). The listing process does not encumber or preclude PRPs from entering into these agreements. The EPA has entered into such agreements between proposal and promulgation at other sites, and such an alternative is available at this Site.

Regarding the City's comments suggesting that the three plumes should not be combined into a single listing, EPA acknowledges that separate sites could be listed, but doing so would only delay the listing and any resulting remedy. The EPA provides an explanation for why the three plume sources are identified in a combined listing on page 20 of the HRS documentation record at proposal:

The Broadway Street Corridor Groundwater Contamination site consists of three (3) groundwater plumes without an identified source or sources and is located in Anderson, Madison County, Indiana (see Figures 1 and 3 of this HRS Documentation Record). The groundwater plumes have contaminated the drinking water of three (3) municipal wells with chlorinated volatile organic compounds (VOCs) (see Tables J and M of this HRS Documentation Record). The three (3) impacted municipal wells are identified as Ranney Well #1, Ranney Well #4, and Ranney Well #5. The water from these three (3) wells is blended with the water from five (5) other wells that supply water to the Wheeler Avenue Treatment Plant (Refs. 4, p. 46; 68, p. 1). The water from these eight (8) wells is blended at the Wheeler Avenue Treatment Plant (Ref. 4, p. 46). The treatment plant serves 60% of the population of Anderson (Ref. 4, p. 45). Of the 34,800 people

served by the Wheeler Avenue Treatment Plant, the three (3) impacted wells supply drinking water to 13,050 people (Ref. 58, p. 2; Section 3.3.2.2 of this HRS Documentation Record). Each Ranney well has its own separate Wellhead Protection Area (WHPA) as shown in the Anderson Water Department's Wellhead Protection Plan (WHPP) (Refs. 5, pp. 46, 52, 53; 59, p. 1; Figure 4 of this HRS Documentation Record). As a result of each Ranney well having its own separate WHPA, each Ranney well draws from a different upgradient area containing multiple different possible sources (Ref. 85; Figure 4 of this HRS Documentation Record). IDEM staff has researched and investigated possible contributors to the impacted municipal wells during the Site Inspection (SI) and Expanded Site Inspection (ESI) activities (Refs. 3, pp. 6, 8, 37-38; 4, pp. 22, 26-28; 44, pp. 1-3; 69, pp. 1-20; 85, pp. 3-6). After these extensive investigations, a specific source causing a significant increase in each separate groundwater plume area has not been identified (see section 3.1.1 of this HRS Documentation Record; Ref. 69). Although there are as many as three (3) separate, distinct groundwater plumes from three (3) separate WHPA source drainage areas, the Broadway Street Corridor Groundwater Contamination is being scored as one (1) site because each of the three (3) wells affect the same targets and so future site evaluations, including selection and implementation of remedial actions, can be performed in a coordinated and efficient manner.

Pages 20 and 21 of the HRS documentation also explain that each of the plumes sources, if considered to be individual sites, score above 28.50 independently to qualify for the NPL (see Attachments 1, 2, and 3 to the HRS documentation record at proposal). Therefore, if further investigation determines individual contributors to the plumes, the site(s) need not be re-proposed.

Regarding the City's comments that the three contaminated plumes have two separate wellhead protection areas, if it is suggesting that sites should be delineated based on wellhead protection area, wellhead protection areas are not sources, nor are they source (or site) boundaries for HRS purposes. In the HRS, as defined above, a site is the sources of the released contamination and where contamination has come to be located.

The EPA agrees with the City regarding the location of the three plumes and the wellhead protection areas (in fact, this information was identified in the HRS documentation record at proposal on pages 20, 23, 27 and 31, and the documentation record clearly states that the wellhead protection areas may indicate that the original source(s) of contamination may be emanating from different areas for each of the three contaminated Ranney wells scored). However, this does not mean the wellhead protection areas should be considered separate sites. The wellhead protection areas are not representative of the extent of the plume sources or the plume boundaries. These wellhead protection areas were not delineated based on an area of contamination, as sources and sites are required to be, and were instead based on calibrated flow modelling in the locations immediately surrounding the modeled wells (page 18 of Reference 5, Wellhead Protection Area Delineation Model, of the HRS documentation record at proposal).

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### **3.5 Economic Impact – Stigma of Listing**

Comment: The City stated that placing the Site on the NPL will harm the City and its residents. The City explained that listing will needlessly alarm the citizens of Anderson, unnecessarily stigmatize the city, damage the economic and social fabric of a vulnerable community, and result in no appreciable improvement to the community's water or the aquifer. Specific damages noted by the City include damages to business reputations, loss of property value, and considerable costs to the community in dealing with a Superfund site. The City claims these issues are exacerbated by the potential size of the Site (currently undefined), the large number of commercial and residential properties potentially within the undefined boundaries of the Site, and the number of "possible sources" of contamination, which IDEM estimates at 120.

Response: Economic factors such as those raised by the commenter are generally not considered in the assessment of whether a site belongs on the NPL. Inclusion of a site on the NPL does not in itself reflect a judgment on the activities of a company or a town, but rather reflects the EPA's judgment that a significant release or threat of release has occurred and that the site is a priority for further investigation under CERCLA. Any stigma that may be associated with the placement of a site on the NPL or economic factors, such as those raised by the commenter, are generally not considered in the assessment of whether a site belongs on the NPL based on an HRS evaluation. Even if indirect economic factors (i.e., business reputations and property values) were considered at this stage of the Superfund process, any alleged negative impacts noted by the commenter would be caused by the contamination in the area, not by placing the Site on the NPL.

The EPA notes that there are both costs and benefits that can be associated with listing a site. Among the benefits are increased health and environmental protection as a result of increased public awareness of potential hazards. In addition to the potential for Federally financed remedial actions, the addition of a site to the NPL could accelerate privately financed, voluntary cleanup efforts. Listing sites as national priority targets also may give States increased support for funding responses at particular sites. As a result of the additional CERCLA remedies, there will be lower human exposure to high-risk chemicals and higher quality surface water, groundwater, soil, and air. Therefore, it is possible that any perceived or actual negative fluctuations in property values or development opportunities that may result from contamination may also be countered by positive fluctuations when a CERCLA investigation and any necessary cleanup are completed.

Regarding commenters' concerns that listing the Site on the NPL would have considerable costs to the community that could be exacerbated by the potential size of the Site, the discussion of costs in NPL rules in the *Federal Register* clearly states that including a site on the NPL does not cause the EPA necessarily to undertake additional action; it does not require any action by a private party, nor does it assign liability for site response costs (56 FR 21462, May 9, 1991). Therefore, the potential costs cited by the commenters are associated with events that generally follow listing a site, not with the listing itself.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### **3.6 Risk to Human Health and the Environment**

Comment: The City claims that the Site does not pose any risk to citizens and no remedy is required to protect human health and the environment. The City explained that the drinking water supplied by Anderson Water Department to the citizens of Anderson is sampled and tested quarterly for VOCs, meets all state and federal drinking water standards, and the trace levels of VOCs detected are below the applicable drinking water maximum contaminant levels (MCLs) for VOCs. The City also explained, of Anderson's eight wells, only three show VOC impacts of any kind; further, those impacts present no risks to the people of Anderson because water from these three wells is treated and blended before it becomes drinking water. The City asserted that the listing focuses on the raw water and not the finished drinking water provided to the people of Anderson, and the level of VOCs in the raw water is declining. According to the City, the federal Safe Drinking Water Act addresses the appropriate use of all wellfields with trace legacy contamination and provides more than adequate oversight and regulation of Anderson's delivery of drinking water.

The City stated that the HRS should accurately assess the relative degree of risk to human health and the environment, and when listing a site, the EPA should not act in a manner that is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law. The City added that including this low risk site on the NPL will "thwart rather than advance Congress' purpose of creating a priority list based on evidence of high risk levels." The City referenced *Mead Corp v. Browner* (100 F.3d 152, 156 [D.C. Cir. 1996]) in support of its statements. According to the City, "[t]he risk that Anderson's residents will be exposed to VOCs in drinking water is virtually nil."

The City stated that the HRS documentation record failed to identify the source and amount of contamination or the area affected, thus, the risk cannot be adequately measured as required by law. The City contended that identifying numerous sites that “could” be contributors does nothing to add to the EPA’s understanding of the Site and does not help quantify risks. The City questioned, “If the sources haven’t been identified, how can EPA properly assess risk? If, for instance, the source has already been subject to a remedial or removal effort, the risk to the public would be minimal (and would explain why contamination levels are dropping).” The City further claimed that the EPA has not examined the relevant data, explained the scientific basis for its decisions, or offered substantial evidence in support of its decision.

Response: EPA considers that there is a threat to human health posed by the contamination in the groundwater and that this threat warrants further investigation before determining the site-specific risk. Consistent with CERCLA, this Site is being placed on the NPL based on an HRS evaluation of the risk **relative** to other sites being considered for the NPL resulting from the release of hazardous substances to a groundwater aquifer and the resulting threat the release poses to the City of Anderson’s drinking water supply. Placing a site on the NPL is not based on a site-specific risk assessment, nor does listing require that a site-specific risk assessment be performed prior to the listing. A site-specific risk assessment is performed later in the Superfund process, following more extensive sampling.

The HRS site score for this site above 28.50 represents the EPA’s determination that the Site poses a risk relative to other sites evaluated under the HRS and warrants further investigation. An HRS groundwater pathway score of 100, the maximum that can be assigned to that pathway, was achieved in the scoring of this site, and the resulting overall site score of 50.00 is above the minimum score of 28.50 required for qualifying the Site for the NPL. Three contaminated plume sources have been documented at the Site and drinking water target wells are contaminated with VOCs. TCE and vinyl chloride were documented at concentrations above the cancer risk screening concentration, and PCE was documented at concentrations equaling the MCL. (See pages 39, 40, 44 and 45, and Tables J and M of the HRS documentation record at proposal). The City has not shown this score to be in error.

Regarding the site-specific risk, the EPA will determine this measure of risk during a different stage of the Superfund process. EPA will collect sufficient information to completely evaluate the site-specific risk associated with the contaminated aquifer as part of this later stage of the process. The EPA will then perform a comprehensive risk assessment once sufficient information is gathered to do so. The results of risk assessment activities will be considered during the evaluation of the need for remedial actions at the site.

Regarding the City’s statement that the blended water supply system contaminant levels were not above drinking water criteria in a recent sampling event, this does not show that there is no unacceptable risk. The City has not presented any evidence to show that new “relevant data” shows that there is no risk to populations currently or in the future using the aquifer, particularly as the contamination may spread to other parts of the aquifer, or that the recent dip in contamination levels may be transitory. While the contamination may not be currently reaching City of Anderson drinking water customers at levels above the MCLs, the actions by the City do not permanently address the current and potential future threat posed by the contamination in the aquifer that may spread over time. The City also did not show the data used in the HRS evaluation was in error or that the EPA used the data incorrectly. As further explained in section 3.7, Releases Below Regulatory Limits, below in this support document, while MCLs can be used in an HRS evaluation, they are not the only regulatory levels/benchmarks used in an HRS evaluation and there is no requirement for a release to exceed an MCL to be considered eligible for evaluating an observed release for HRS purposes. Also, see section 3.9, Releases to the Aquifer, of this support document for a detailed discussion of establishing an observed release to groundwater for HRS scoring.

Additionally, information in the HRS documentation record documents that the finished water sampled at the Wheeler Avenue Treatment Plant had detections of VOCs. Page 21 of the HRS documentation record at proposal states the Preliminary Assessment (PA) conducted by IDEM noted that elevated VOC concentrations were detected in the finished water in 2004, 2005, 2006, 2010 and 2011 (Ref. 46, p. 1, 17, 19, 22). Page 14 of

Reference 3, Expanded Site Inspection Report, of the HRS documentation record at proposal states, “The Wheeler Water Treatment Plant showed elevated VOC levels in the finished water in 2004, 2005, 2006, 2010, 2011, and 2014. The elevated VOC levels in the Wheeler Water Treatment Plant have not exceeded the Drinking Water MCL [Emphasis added].” Similarly, page 20 of Reference 4, Site Inspection Report, states,

A review of the SDWIS database (March 19, 2002 to May 1, 2014) for the Wheeler Water Treatment Plant’s finished water indicated elevated levels of TCE, PCE, cis-1,2-DCE, chloroethane, and p-dichlorobenzene. The Wheeler Water Treatment Plant showed elevated VOC levels in the finished water in 2004, 2005, 2006, 2010, 2011, and 2014. The elevated VOC levels in the Wheeler Water Treatment Plant have not exceeded the Drinking Water MCL. [Emphasis added]

This finding of contamination in the drinking water supply supports that further investigation is necessary to determine site-specific risk.

Finally, regarding the lack of identification of specific original sources contributing to the contaminated groundwater plumes, the HRS evaluation of this site evaluated the sources as consisting of three contaminated groundwater plumes with no identified source(s) because there are too many possible facilities of origin in the vicinity of the contaminated plumes to attribute the significant increase to a specific source. This evaluation is consistent with the criteria established in the HRS which are discussed in Section 3.8.1, Source Characterization, of this support document. Further, as indicated in Section 3.2, Purpose of Listing, of this support document, the EPA must balance the need to fully characterize a site with the limited resources available to collect and analyze site data at this stage of the Superfund process. The subsequent Superfund remedial investigation and risk assessment will include extensive processes to characterize site conditions and establish the threat posed via additional migration and exposure pathways.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.7 Releases Below Regulatory Limits

Comment: The City commented that the drinking water supplied by the Anderson Water Department meets all state and federal drinking water standards. The City stated volatile organic compound (VOC) levels in the raw water from Ranney wells #1, #4 and #5 are now below the applicable drinking water maximum contaminant levels (MCLs) for VOCs.

Response: Releases below the MCL or below other regulatory benchmarks are not excluded from the purview of CERCLA and are eligible releases for evaluation under the HRS including listing on the NPL.

On July 16, 1982, when responding to public comments on the proposed (original) HRS (47 FR 31188), and again on September 8, 1983 (48 FR 40665), the EPA rejected the idea that releases within regulatory limits should not be considered releases under the HRS. As the EPA noted in 1982:

[E]mission or effluent limits do not necessarily represent levels which cause no harm to public health or the environment. These limitations are frequently established on the basis of economic impacts or achievability.

The fact that the release may have been “Federally-permitted” also does not preclude listing. CERCLA Section 105(a)(8)(B) directs the EPA to list on the NPL “releases” of hazardous substances, pollutants, and contaminants according to specific criteria set out in CERCLA Section 105(a)(8)(A). The definition of “release” in CERCLA Section 101(22) exempts certain releases from its scope, but it does not exempt “Federally-permitted releases”; thus, even if discharges occur within the regulatory limits set by those Federal laws enumerated in CERCLA Section 101(10), so as to constitute “Federally-permitted releases,” the discharges may be considered releases

under CERCLA and, if appropriate under the HRS, placed on the NPL. CERCLA exempts “Federally-permitted releases” only from the notification (Section 103(a) and cost-recovery (107(j)) sections of the statute; such releases remain subject to the other sections of the statute.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.8 Source Identification

Comment: The City commented that the EPA has not identified the source and “the amount” of contamination at the Site.

Response: The three groundwater plume sources were evaluated consistent with the HRS and the source waste quantity assigned to each was based on limited sampling available at proposal. The following subsections contain a detailed response to each of the City’s specific comments on characterizing the sources and quantifying the source waste quantities:

- 3.8.1 Source Characterization
- 3.8.2 Source Hazardous Waste Quantity

#### 3.8.1 Source Characterization

Comment: The City commented that the EPA has not sufficiently identified the source of the contamination. The City stated that IDEM has identified over 120 possible sources and the EPA has conceded in the HRS documentation record that there are too many possible sources (i.e., users of VOCs) in the vicinity of the plumes to reasonably attribute the significant increase of groundwater contamination to all or any specific sources.

Response: The three contaminated groundwater plumes at Ranney wells #1, #4, and #5, were evaluated as sources at this Site consistent with the HRS. The HRS allows for the evaluation of a contaminated groundwater plume with no identified source as a source in scoring the Site. Further, the NPL lists sites, not sources. Listing this site as consisting of three contaminated groundwater plumes with no identified sources acknowledges that the original sources contributing to the groundwater plumes are not identified. The EPA has performed investigations in an attempt to identify the original source(s) and sufficient information as to this fact was gathered and presented in the HRS documentation record at proposal. As necessary, additional investigations to determine definitive sources at a particular site are performed at the RI/FS stage of the Superfund process.

HRS Section 1.1, *Definitions*, defines a site as:

Area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include the area between sources.

HRS Section 1.1, *Definitions*, defines a source as:

Any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance. Sources do not include those volumes of air, groundwater, surface water, or surface water sediments that have become contaminated by migration, except: **in the case of either a groundwater plume with no identified source or contaminated surface water sediments with no identified source, the plume or contaminated sediments may be considered a source.**  
[Emphasis added.]

The HRS documentation record at proposal explains the contaminated plume sources for HRS scoring. The explanation for the Ranney well #1 plume source states the following on page 23 of the HRS documentation record at proposal:

Source No. 1 consists of a contaminated groundwater plume of cis-1,2-DCE and TCE with no identified source for the Ranney Well #1 municipal well (see Section 3.1.1 of this HRS Documentation Record). Cis-1,2-DCE, and TCE, are degradation products of PCE (Ref. 62, pp. 1-4). These hazardous substances are manufactured chemicals and do not occur naturally in the environment (Refs. 61, p. 1; 63, p. 1; 64, p. 1; 65, p. 1). As explained below, no single identifiable source could be identified as the actual source(s) of the Broadway Street Corridor Groundwater Contamination.

...

Groundwater samples and subsurface soil samples were collected for the SI and ESI to determine possible source areas. However, a specific source(s) for the contamination found in the impacted Ranney Well #1 municipal well could not reasonably be determined. Based on the history of the area and extensive development along the White River and Killbuck Creek, the possible VOC source(s) cannot be defined without further investigation (Ref. 47, p. 3).

The explanation for the Ranney well #4 plume source states the following on page 27 of the HRS documentation record at proposal:

Source No. 2 consists of a contaminated groundwater plume of VC, cis-1,2-DCE and TCE with no identified source for municipal well Ranney Well #4 (see Section 3.1.1 of this HRS Documentation Record). VC, Cis-1,2-DCE, and TCE, are degradation products of PCE (Ref. 62, pp. 1-4). These hazardous substances are manufactured chemicals and do not occur naturally in the environment (Refs. 61, p. 1; 63, p. 1; 64, p. 1; 65, p. 1). As discussed below, no single identifiable source could be identified as the actual source(s) of the Broadway Street Corridor Groundwater Contamination.

...

Groundwater samples and subsurface soil samples were collected for the SI and ESI to determine possible source areas. However, a specific source(s) for the contamination found in the impacted Ranney Well #4 municipal well could not reasonably be determined. Based on the history of the area and extensive development along the White River and Killbuck Creek, the possible VOC source(s) cannot be defined without further investigation (Ref. 47, p. 3).

The explanation for the Ranney well #5 plume source states the following on page 31 of the HRS documentation record at proposal:

Source No. 3 consists of a contaminated groundwater plume of PCE with no identified source for the Ranney Well #5 municipal well (see Section 3.1.1 of this HRS Documentation Record). PCE is a manufactured chemical and does not occur naturally in the environment (Ref. 61, p. 1). As explained below, no single identifiable source could be identified as the actual source(s) of the Broadway Street Corridor Groundwater Contamination.

...

Groundwater samples and subsurface soil samples were collected for the SI and ESI to determine possible source areas. However, a specific source(s) for the contamination found in the impacted

Ranney Well #5 municipal well could not reasonably be determined. Based on the history of the area and extensive development along the White River and Killbuck Creek, the possible VOC source(s) cannot be defined without further investigation (Ref. 47, p. 3).

The HRS documentation record at proposal also presents a discussion detailing the EPA investigations performed to identify the original sources of the groundwater contamination, and documented that no single origin for each plume could be determined for HRS scoring. Pages 20 through 21 of the HRS documentation record at proposal states:

As a result of the elevated levels of chlorinated solvents detected in the groundwater in municipal wells, the IDEM Site Investigation Program conducted a Pre-CERCLIS Screening (PCS) and recommended that the site be entered into CERCLIS (now SEMS) (Ref. 9, p. 1).

The Preliminary Assessment (PA) conducted by IDEM [under a cooperative agreement with EPA] noted that elevated VOC concentrations were detected in the unfinished water in 1988 and 1992 and in the finished water in 2004, 2005, 2006, 2010 and 2011 (Ref. 46, p. 1, 17, 19, 22). In August 2013, the IDEM Site Investigation Program staff sampled the wells that supply water to the Wheeler Avenue Treatment Plant for VOCs (Refs. 46, pp. 2, 22; 69, p. 1). The groundwater sample results indicated concentrations of PCE in Ranney Well #5 at 5 µg/L, TCE in Ranney Well #1 at 11 µg/L, and VC [vinyl chloride] in Ranney Well #4 at 2 µg/L. The PA was finalized in February 2014 (Ref. 46, p. 10).

A Site Inspection (SI) was conducted on July 21 through July 25, 2014 (Ref. 4, p. 22). A total of twenty-seven (27) groundwater samples and twenty (20) soil samples were collected (Ref. 4, p. 22). The groundwater samples were designated E2TA1, E2T66, E2T70, E2T72, E2T73, E2T77, E2T76, E2T78, E2T79, E2T80, E2T81, E2T82, E2T85, E2T87, E2T90, E2T91, E2T92, E2T93, E2T96, E2T98, E2T64, E2T68, E2T88, E2T94 and E2T95. Two (2) of the water samples were trip blanks. The groundwater samples were collected from all municipal wells that supply water to the Wheeler Avenue Treatment Plant as well as from direct push probes. All samples were analyzed for VOCs only (Ref. 4, p. 23). Seventeen (17) subsurface soil samples were also obtained and were designated as E2TA4, E2TA2, E2TA3, E2TA5, E2TA6, E2TB0, E2TB1, E2TB2, E2TB6, E2TB7, E2TB8, E2TC2, E2TC3, E2TB4, E2TB7, E2TC0 and E2TC1. PCE was detected in only two (2) subsurface soil samples, E2TA6 and E2TC1 at concentrations of 69 µg/kg and 31 µg/kg, respectively (Ref. 4, pp. 39, 40, 92). Figure 5 of this HRS Documentation Record illustrates the location of all soil samples and their respective analytical result. Figure 4 of this HRS Documentation Record illustrates the location and analytical result of the groundwater samples described above.

Pages 40 through 41 of the HRS documentation record at proposal states:

The Broadway Street Corridor Groundwater Contamination site has a documented release of TCE, PCE, cis-1,2-DCE, and VC to the groundwater that has contaminated three (3) active municipal wells (see Contaminated Ground Water from Ranney Municipal Wells Sample Table of this HRS Documentation Record).

During the SI and ESI, staff undertook an extensive level of effort by searching IDEM, county, and EPA records to identify possible sources of groundwater contamination. Staff also collected direct push groundwater grab samples and subsurface soil samples on the properties of, or downgradient from, facilities within the WHP [well head protection] areas that were thought to be associated with the contaminants of concern (Ref. 44, p.1; 69, pp. 1-27). Based on the efforts during the SI and ESI, there is insufficient evidence to attribute the groundwater contamination in Ranney Well #1, Ranney Well #4, and Ranney Well #5 municipal wells to sources at nearby

facilities. Refer to Reference 69 and its supporting references, which include References 3; 4; 5; 6; 7; 8; 12; 13; 14; 15; 16; 18; 19; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34; 35; 36; 37; 38; 39; 40; 41; 42; 43; 44; 45; 46; 48; 49; 50; 51; 52; 53; 54; 55; 56; 58; 81; 83; 84; 85; 86; and 87, for a detailed summary of the level of effort and determining any attribution associated with facilities and the samples collected.

Thus, the multiple site investigations that were performed prior to the proposed listing of the Broadway Street Corridor Groundwater Contamination site (a PA, SI, and ESI) contain sufficient information to document the EPA's efforts performed to identify original sources, as well as the determination that individual sources for each plume could not be identified. The EPA's efforts included site reconnaissance activities, record searches, and sampling events specifically performed to identify the possible origins of the groundwater contamination at the Site. Approximately 137 possible source locations were identified and the EPA narrowed its investigations to the locations of former landfills and 6 facilities based on groundwater flow direction, their likely use of VOCs (drycleaners, auto industry), their location within the wellhead protection area, and their proximity to the contaminated plumes. The EPA then performed sampling to attempt to identify specific sources but was unable to document and attribute the release to any specific source(s). Therefore, for HRS scoring, the source of the contaminated plumes is the contaminated groundwater plume with no identified source for each of Ranney wells #1, #4, and #5. The HRS documentation record as proposed demonstrates that EPA's decision to treat the contaminated groundwater plumes as sources is consistent with the HRS.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.8.2 Source Hazardous Waste Quantity

Comment: The City commented that the EPA had not sufficiently identified "the amount" of the contamination at the Site.

Response: The source hazardous waste quantity value presented in the HRS documentation record at proposal for each of the three sources evaluated was estimated consistent with the HRS as unknown, but greater than zero. The HRS does not require that the total amount of contamination at each source or the site be fully determined at the time a site is listed on the NPL. The City does not contest that the contaminated plumes exist in the aquifer, and the EPA agrees with the City that the amount of contamination in the aquifer is unknown and that there is currently inadequate information to determine a more specific value. However, the data available allowed the EPA to follow the HRS and appropriately assign a Tier C, volume, estimate of unknown but greater than zero for Sources 1, 2, and 3. This value is based on the presence of contaminated groundwater samples collected from the three plumes in the aquifer. Although the exact amount of contamination in the plume sources cannot be determined, the quantity estimate has no impact on the identification of the contaminated groundwater plumes as sources. Additionally, determining more accurate source waste quantities would not result in a lower HRS site score. As scored at proposal, the ground water migration pathway achieved a maximum pathway score of 100, resulting in a site score of 50.00 for the combined Site scoring as well as for scoring each well individually (Ranney wells, #1, #4, and #5; see Appendix 1, 2, and 3 of the HRS documentation record).

HRS Section 2.4.2.1, *Source hazardous waste quantity*, describes the process for evaluating source hazardous waste quantity. It states in relevant part:

For each of the three migration pathways, assign a source hazardous waste quantity value to each source (including the unallocated source) having a containment factor value greater than 0 for the pathway being evaluated. ....

....

For all pathways, evaluate source hazardous waste quantity using the following four measures in the following hierarchy:

- Hazardous constituent quantity.
- Hazardous wastestream quantity.
- Volume.
- Area.

The EPA used the volume measure to assign a source hazardous waste quantity to each of the plumes evaluated as Sources 1, 2, and 3 in the HRS documentation record at proposal and the City did not contest using this measure in the assignment of the hazardous waste quantity presented in the HRS documentation record.

HRS Section 2.4.2.1.3, *Volume*, (the tier the EPA used to estimate a waste quantity) instructs the scorer to “[e]valuate the volume measure using the volume of the source....” It states:

Based on the volume, designated as V, assign a value to the volume measure as follows:

- For the migration pathways, assign the source a value for volume using the appropriate Tier C equation of Table 2-5.

...

**If the volume of the source (or volume of the area of observed contamination, if applicable) can be determined, do not evaluate the area measure.** Instead, assign the area measure a value of 0 and proceed to section 2.4.2.1.5. If the volume cannot be determined (or is not applicable for the soil exposure pathway), assign the source (or area of observed contamination) a value of 0 for the volume measure and proceed to section 2.4.2.1.4. [Emphasis added].

HRS Table 2-5, *Hazardous Waste Quantity Evaluation Equations*, lists the applicable HRS source types with their applicable HRS hazardous waste quantity tiers and equations for assigning a value:

| <b>Table 2-5 Hazardous Waste Quantity Evaluation Equations</b> |                                         |                 |                                                  |
|----------------------------------------------------------------|-----------------------------------------|-----------------|--------------------------------------------------|
| <b>Tier</b>                                                    | <b>Measure</b>                          | <b>Units</b>    | <b>Equation for assigning value <sup>a</sup></b> |
| A                                                              | Hazardous constituent quantity (C)      | lb              | C                                                |
| B <sup>b</sup>                                                 | Hazardous wastestream quantity (W)      | lb              | W/5,000                                          |
| C <sup>b</sup>                                                 | Volume (V)                              |                 |                                                  |
|                                                                | Landfill                                | yd <sup>3</sup> | V/2,500                                          |
|                                                                | Surface impoundment                     | yd <sup>3</sup> | V/2.5                                            |
|                                                                | Surface impoundment (buried/backfilled) | yd <sup>3</sup> | V/2.5                                            |
|                                                                | Drums <sup>c</sup>                      | gallon          | V/2.5                                            |
|                                                                | Tanks and containers other than drums   | yd <sup>3</sup> | V/2.5                                            |
|                                                                | Contaminated soil                       | yd <sup>3</sup> | V/2,500                                          |
|                                                                | Pile                                    | yd <sup>3</sup> | V/2.5                                            |

| <b>Table 2-5 Hazardous Waste Quantity Evaluation Equations</b> |                                         |                 |                                                  |
|----------------------------------------------------------------|-----------------------------------------|-----------------|--------------------------------------------------|
| <b>Tier</b>                                                    | <b>Measure</b>                          | <b>Units</b>    | <b>Equation for assigning value <sup>a</sup></b> |
|                                                                | Other                                   | yd <sup>3</sup> | V/2.5                                            |
| D <sup>b</sup>                                                 | Area (A)                                |                 |                                                  |
|                                                                | Landfill                                | ft <sup>2</sup> | A/3,400                                          |
|                                                                | Surface impoundment                     | ft <sup>2</sup> | A/13                                             |
|                                                                | Surface impoundment (buried/backfilled) | ft <sup>2</sup> | A/13                                             |
|                                                                | Land treatment                          | ft <sup>2</sup> | A/270                                            |
|                                                                | Pile <sup>d</sup>                       | ft <sup>2</sup> | A/13                                             |
|                                                                | Contaminated soil                       | ft <sup>2</sup> | A/34,000                                         |

<sup>a</sup> Do not round to nearest integer.

<sup>b</sup> Convert volume to mass when necessary: 1 ton=2,000 pounds=1 cubic yard=4 drums=200 gallons.

<sup>c</sup> If actual volume of drums is unavailable, assume 1 drum=50 gallons.

<sup>d</sup> Use land surface area under pile, not surface area of pile.

To calculate the source hazardous waste quantity value, HRS Section 2.4.2.1.5, *Calculation of source hazardous waste quantity value*, instructs the scorer to:

Select the highest of the values assigned to the source (or area of observed contamination) for the hazardous constituent quantity, hazardous wastestream quantity, volume, and area measures. Assign this value as the source hazardous waste quantity value. Do not round to the nearest integer.

HRS documentation record at proposal explains the rationale for evaluating the source hazardous waste quantity for Sources 1, 2 and 3 based on Tier C, volume.

Pages 25 through 26 of the HRS documentation record at proposal explain the rationale for evaluating Source 1, Groundwater Plume with No Identified Source for Ranney Well #1, source hazardous waste quantity:

#### 2.4.2.1.3. Volume (Tier C)

Because the horizontal and vertical extent of the plume cannot be determined based on available sampling data, the source volume is unknown, but greater than 0 (Ref. 1, Section 2.4.2.1.3).

**Table B**

| <b>Source Type</b> | <b>Description<br/>(# drums or dimensions)</b> | <b>Units<br/>(yd<sup>3</sup>/gal)</b> | <b>References</b> |
|--------------------|------------------------------------------------|---------------------------------------|-------------------|
| Other              | Unknown but >0                                 | --                                    | Ref. 1, Table 2-5 |

Sum (yd<sup>3</sup>/gal): > 0

Equation for Assigning Value (Ref. 1, Table 2-5) >0/2.5=>0

Volume Assigned Value: Unknown, but > 0

## 2.4.2.1.4. Area (Tier D)

The area measure (Tier D) is not evaluated for source type “other” (Ref. 1, Table 2-5).

Area Assigned Value: 0

Pages 29 through 30 of the HRS documentation record at proposal explain the rationale for evaluating Source 2, Groundwater Plume with No Identified Source for Ranney Well #4, source hazardous waste quantity:

## 2.4.2.1.3. Volume (Tier C)

Because the horizontal and vertical extent of the plume cannot be determined based on available sampling data, the source volume is unknown, but greater than 0 (Ref. 1, Section 2.4.2.1.3).

**Table D**

| Source Type | Description<br>(# drums or dimensions) | Units<br>(yd <sup>3</sup> /gal) | References        |
|-------------|----------------------------------------|---------------------------------|-------------------|
| Other       | Unknown but >0                         | --                              | Ref. 1, Table 2-5 |

Sum (yd<sup>3</sup>/gal): > 0

Equation for Assigning Value (Ref. 1, Table 2-5) >0/2.5=>0

Volume Assigned Value: Unknown, but > 0

## 2.4.2.1.4. Area (Tier D)

The area measure (Tier D) is not evaluated for source type “other” (Ref. 1, Table 2-5).

Area Assigned Value: 0

Pages 33 through 34 of the HRS documentation record at proposal explain the rationale for evaluating Source 3, Groundwater Plume with No Identified Source for Ranney Well #4, source hazardous waste quantity:

## 2.4.2.1.3. Volume (Tier C)

Because the horizontal and vertical extent of the plume cannot be determined based on available sampling data, the source volume is unknown, but greater than 0 (Ref. 1, Section 2.4.2.1.3).

**Table F**

| Source Type | Description<br>(# drums or dimensions) | Units<br>(yd <sup>3</sup> /gal) | References        |
|-------------|----------------------------------------|---------------------------------|-------------------|
| Other       | Unknown but >0                         | --                              | Ref. 1, Table 2-5 |

Sum (yd<sup>3</sup>/gal): > 0

Equation for Assigning Value (Ref. 1, Table 2-5) >0/2.5=>0

Volume Assigned Value: Unknown, but > 0

#### 2.4.2.1.4. Area (Tier D)

The area measure (Tier D) is not evaluated for source type “other” (Ref. 1, Table 2-5).

Area Assigned Value: 0

The information available at listing was not sufficient to determine the depth, width, and length of contamination that would enable a more precise estimation of the contaminant volume to be determined. For each of the three Ranney well plume sources (Source 1, 2, and 3 in the HRS documentation record at proposal), only one groundwater sample location was used to characterize each plume. Therefore, a value of unknown but greater than zero was assigned as the Tier C, volume, estimate. Then, consistent with the HRS, Tier D, area, was not estimated to determine a source waste quantity because the source volume was estimated and because the source type of the three plume sources is “other” (the HRS does not allow for an area determination for source type “other;” see HRS Table 2-5 quoted above in this response). Further, even if the EPA wanted to delineate a geographic aerial extent of the plumes locations, there was insufficient data at the time of listing to do so because an area value for each of the three plumes cannot be determined based on one well location for each plume. See Section 3.3, Extent of Contamination, of this support document, for further discussion of the extent of contamination at the listing stage of the Superfund process.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.9 Releases to the Aquifer

Comment: The City contended that the HRS documentation record exaggerates the extent of contamination in the wellfields. The City commented that the 2014 sampling results show declining contamination when compared to the 2013 sampling results. The City added that it recently sampled (in 2018) the raw water coming from its eight drinking water wells and the results show that the contamination levels in Ranney well #1, Ranney well #4, and Ranney well #5 have continued to drop since 2014. According to the City, VOC levels in the raw water from those three wells are now below the applicable drinking water MCLs for VOCs. The City also added that the 2018 sampling results showed VOCs are not detected in Ranney #2, Elder # 1, Elder #2, Norton # 1, and Norton #2 wells.

The City made the following comments regarding TCE, PCE, cis-1,2-DCE, and vinyl chloride levels at the Site:

The MCL for TCE is 5.0 µg/L. In 2013, Ranney #1 tested at 11.0 µg/L, and in July of 2014, TCE concentrations dropped to 7.1 µg/L. The 2018 samples show that the TCE in Ranney #1 has dropped below the TCE drinking water MCL, to 4.5 µg/L. None of the tests of raw water from Ranney #4 or Ranney #5 showed exceedances of the TCE MCL.

The MCL for PCE is also 5.0 µg/L. In 2013, Ranney #5 tested at 5.6 µg/L for PCE, and in July of 2014, Ranney #5 tested at 5.4 µg/L for PCE. The 2018 samples show that the PCE in Ranney #5 has fallen below the PCE drinking water MCL to 3.6 µg/L. None of the tests of raw water from Ranney #1 or Ranney #4 showed exceedances of the PCE MCL.

The MCL for cis-1,2-DCE is 70.0 µg/L. None of the raw water tests of Anderson's wells have ever shown exceedances of the cis-1,2-DCE MCL. In 2013, samples from Ranney #1 showed .84 µg/L, and those results fell to .77 µg/L in 2014. The 2018 results indicate that Ranney #1 is now non-detect for cis-1,2-DCE. Ranney #4 tested at 4.9 µg/L in 2013 and 5.1 µg/L in 2014, but the 2018 results show that the level of cis-1,2-DCE in Ranney #4 has fallen to 3.4.

The MCL for VC [vinyl chloride] is 2.0 µg/L. None of the raw water tests of Anderson's wells have ever shown exceedances of the VC MCL. The level of VC in Ranney #4 was 2.0 in 2013, and then 1.2 in 2014. The 2018 results show that VC levels have dropped to .73 µg/L.”

The City commented that IDEM inspected the Site in July 2015, but for unknown reasons, IDEM did not sample raw water from the Ranney wells.

Response: The HRS documentation record at proposal correctly established that a release of TCE, cis,1-2DCE, vinyl chloride and PCE has occurred in the aquifer utilizing the 2014 analytical results, a fact the City does not refute. The 2018 analytical results showing a decrease in the concentration of VOCs in the aquifer does not refute that a release has occurred and was correctly documented in the HRS documentation record at proposal. As identified above in Section 3.7, Releases Below Regulatory Limits, of this support document, neither CERCLA nor the HRS requires that the concentration establishing significant increases be above any applicable standards for a release to groundwater to be eligible for evaluation. The EPA does not have to show continuous ongoing releases. Further, even when the groundwater samples collected by the City in 2018 (collected after the Site had been proposed to the NPL) are considered, the City’s 2018 analytical results provide additional evidence that a release has occurred and contamination meeting observed release criteria remains in the aquifer.

First, the directions for establishing releases to groundwater are in HRS Sections 3.1, *Likelihood of release*, 3.1.1 *Observed release*, and 2.3, *Likelihood of release*. None of these sections requires the concentration in the observed release samples to be above regulatory limits.

In evaluating the likelihood of release factor for the ground water migration pathway, HRS Section 3.1, *Likelihood of release*, states:

For an aquifer, evaluate the likelihood of release factor category in terms of an observed release factor or a potential to release factor.

In establishing an observed release for the ground water migration pathway, HRS Section 3.1.1, *Observed release*, states:

Establish an observed release to an aquifer by demonstrating that the site has released a hazardous substance to the aquifer. Base this demonstration on either:

- Direct observation—a material that contains one or more hazardous substances has been deposited into or has been observed entering the aquifer.
- Chemical analysis—an analysis of ground water samples from the aquifer indicates that the concentration of hazardous substance(s) has increased significantly above the background concentration for the site (see section 2.3). Some portion of the significant increase must be attributable to the site to establish the observed release, except: when the source itself consists of a ground water plume with no identified source, no separate attribution is required.

As referenced in HRS Section 3.1.1, quoted above, HRS Section 2.3, *Likelihood of release*, further directs to:

Establish an observed release either by direct observation of the release of a hazardous substance into the media being evaluated (for example, surface water) **or by chemical analysis** of samples appropriate to the pathway being evaluated (see sections 3, 4, and 6). **The minimum standard to establish an observed release by chemical analysis is analytical evidence of a hazardous substance in the media significantly above the background level.** Further, some portion of the release must be attributable to the site. Use the criteria in Table 2–3 as the standard for determining analytical significance.... [Emphasis added].

On pages 38 through 40, 52 through 54, 66 through 68, and 80 through 82 of the HRS documentation record at proposal, the EPA identified observed releases by chemical analysis according to the HRS requirements cited above. Observed releases by chemical analysis were identified based on a significant increase in TCE, cis,1-2-DCE, vinyl chloride, and PCE at concentrations above background levels, and that at least part of the significant increase was due to a release from the Site (unchallenged by the commenter).

Second, as cited above, Section 2.3 of the HRS (55 FR 51589, December 14, 1990) states that an observed release has occurred if a contaminant is measured significantly above background and some portion of the release is attributable to the site. A trend need not be established (49 FR 37078, September 21, 1984). Thus, new data submitted by the City showing a decrease in concentration do not refute the earlier data used to assign a value for an observed release because many releases vary in concentration through time or occur sporadically. The courts have upheld EPA's interpretation on this point (see *City of Stoughton v. E.P.A.*, 858 F.2d 747, 756 (D.C. Cir. 1988)). In this case, References in the HRS documentation record at the time of proposal demonstrate(s) an observed release of contamination at the Site.

Regarding the City's comment that the Ranney wells were not sampled in 2015, the EPA did not re-sample Ranney wells #1, #4, and #5 during the 2015 ESI because there was sufficient documentation of the VOC contamination in these wells, and the purpose of the 2015 investigation was to identify sources contributing to the contamination in these wells. As stated above, an observed release has occurred and was documented using the 2014 analytical results.

Third, regarding the City's comments that VOCs were below the MCLs, there is no HRS requirement that a release be above or below a specific benchmark to qualify as a release for HRS purposes. The commenter's statement that certain hazardous substances did not exceed the MCL for one or more contaminant drinking water standards in the releases does not disqualify the releases associated with that well from consideration in HRS scoring. The groundwater samples collected in 2014 document a release of hazardous substances to the aquifer: TCE and cis-1,2-DCE in Ranney well #1; TCE, cis-1,2-DCE, and vinyl chloride in Ranney well #4; and PCE in Ranney well #5 (see pages 39 and 40 and Table J of the HRS documentation record at proposal). However, while not required to establish a release to the aquifer, concentrations of TCE, vinyl chloride, and PCE were found to be above certain eligible HRS health-based benchmarks. Concentrations of TCE in Ranney wells #1 and #4 were above the TCE cancer risk screening concentration; concentrations of vinyl chloride in Ranney well #4 were above the cancer risk screening concentration; and concentrations of PCE in Ranney well #5 were above the MCL for PCE (see pages 44 and 45 and Table M of the HRS documentation record at proposal). For additional discussion of eligible HRS health-based benchmarks and how they are used in an HRS evaluation of a site, see Section 3.10.2, Level I Concentrations, of this support document.

Even if the 2018 analytical results provided by the City are used to evaluate the site score, the Broadway Street Corridor Groundwater Contamination site score at promulgation will remain the same as proposed. That is, using the City's data as provided in their comments (see pages A-3 to A-10 of the City's comment document):

1. Likelihood of Release: For each of Ranney wells #1, #4, and #5, the likelihood of release assigned value would remain as scored because a release remains properly documented in the aquifer at each of the wells.
  - Background levels remain as non-detect for TCE, cis,1-2-DCE, vinyl chloride, and PCE at the Site as these substances were not detected at or above their practical quantitation limit of 0.5 µg/L in Ranney well #2, the background location.
  - In Ranney well #1, TCE was detected at 4.5 µg/L, meeting HRS observed release criteria.

- In Ranney well #4, cis-1,2-DCE was detected at 3.4 µg/L, TCE at 1.7 µg/L, and vinyl chloride at 0.73 µg/L, meeting HRS observed release criteria.
  - In Ranney well #5, PCE was detected at 3.6 µg/L, meeting HRS observed release criteria
2. Waste Characteristics: Waste characteristics remains unchanged because the City's data includes the same hazardous substances and hazardous waste quantities are associated with the sources and the site. Therefore, the waste characteristics factor value would remain as assigned in the HRS documentation record at proposal for the combined listing and the individual Ranney wells, #1, #4, and #5 scores.
  3. Targets: The total targets evaluation would remain the same as proposed for the Ranney wells #1 and #4 individual site scores. The concentrations of hazardous substances associated with Ranney wells #1 and #4 in the data provided by the City remains at Level I concentrations and therefore, there would be no change to any of the target scores in the HRS evaluation of these wells (see Section 3.10.2, Level I Concentrations, of this support document).

The total targets evaluation in Ranney well #5 would be revised from 45,663 to 6,508 because, if only the City's data were included in the evaluation, the concentration of PCE in this well would no longer be at or above the lowest eligible HRS benchmark. Therefore, the level of contamination would be revised from Level I to Level II in the well. In the Ranney well #5 individual site score, this would cause the Level I concentration population factor value to be reduced from 43,000 to 0 and the Level II population value to be increased from 0 to 4,350. This would also cause the nearest well assigned value in the Ranney well #5 individual site scoring to be reduced from an assigned value of 50 to 45.

In the combined site scoring, as the Ranney well #5 Level I concentration population has been reduced, this would also cause the Level I concentration population value to be reduced from 130,500 to 87,000 and cause the Level II concentration population value to be increased from 0 to 4,350.

Considering the revisions in the assigned targets values, the total targets assigned in the combined scoring of the Site would be revised from 132,526 to 93,336; for the Ranney well #5 individual site score, the total targets assigned would be revised from 45,663 to 6,508. However, these revised target values both result in the combined site and for Ranney well #5 being maximized at 100 and the overall site score of 50.00 would remain unchanged.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.10 Targets

Comment: The City commented that the people of Anderson are not consuming raw water and asserted that the finished drinking water provided to the people of Anderson meets all applicable standards. The City asserted that the MCLs are for finished water, not raw water sampled in the Ranney wells. The City also asserted that of the 3 Ranney wells evaluated in scoring, only 2 of the wells, Ranney wells #1 and #5, had raw water samples with VOCs above the MCLs for finished drinking water, and now the raw water for all Anderson wells meet finished drinking water state and federal standards. The City added that of the 8 wells evaluated in the HRS documentation record, 5 wells exhibited not-detected results for VOCs.

Response: The target populations scored in the HRS documentation record at proposal were appropriately evaluated in the HRS. The following subsections contain a detailed response to each of the City's specific comments on identifying the target populations, level of contamination, and the potentially contaminated wells:

- 3.10.1 Target Population Identification
- 3.10.2 Level I Concentrations
- 3.10.3 Potential Contamination

### 3.10.1 Target Population Identification

Comment: The City asserted that no one is consuming water that fails to meet drinking water standards and the listing focuses on raw water, not the finished water provided to the people of Anderson. The City explained that Anderson draws water from eight municipal wells that is blended and treated at the City's Wheeler Avenue Treatment Plant, which then becomes finished water or "drinking" water.

Response: All drinking water wells and the populations served by these wells included in the HRS documentation record at proposal were appropriately evaluated as eligible according to the HRS. The HRS directs that all drinking water wells withdrawing water from the aquifer within 4 miles of the center of the groundwater plume be included in the evaluation and that the level of contamination be evaluated based on the contamination in the water at the point of withdrawal. Therefore, while the "raw water" from Ranney wells #1, #4, and #5 is not being served to the Anderson Water Company drinking water customers, the population was appropriately assigned for scoring in an HRS evaluation.

HRS Section 3.3.2, *Population*, states to "count those persons served by wells in **that aquifer** and those persons served by wells in overlying aquifers..." [Emphasis added] Finally, in directing how to assign the level of contamination in a well, HRS Section 3.3.2.1, *Level of contamination*, states to "Evaluate the population served by water from a **point of withdrawal** based on the level of contamination for that **point of withdrawal**." [Emphasis added] Therefore, as stated above, and explained below, the HRS considers the point of withdrawal (i.e., the aquifer) rather than the point of delivery (i.e., post treatment).

The target population evaluation at the Site appropriately assigned the population value for each well and the level of contamination in each well prior to treatment of the water supply. Page 46 of the HRS documentation record at proposal provides the following calculations for the target populations apportioned to the wells serving the Wheeler Avenue Treatment Plant:

The table below lists the wells that supply water to the Wheeler Avenue Treatment Plant and the capacity for each well. The relative contribution of each well that supplies water to the Wheeler Avenue Treatment Plant does not appear to show that any one well contributes more than 40 percent. As stated in Section 3.3 of this HRS Documentation Record, all of the wells listed in this table are the only wells that supply water to the Wheeler Avenue Treatment Plant.

**Table N**  
**Well Capacity**

| Well ID             | Well Capacity (GPM) | References              |
|---------------------|---------------------|-------------------------|
| 1R (Ranney Well #1) | 1,667               | Ref. 20, p. 3; 68, p. 1 |
| 2R (Ranney Well #2) | 2,847               | Ref. 20, p. 3; 68, p. 1 |
| 4R (Ranney Well #4) | 1,111               | Ref. 20, p. 3; 68, p. 1 |
| 5R (Ranney Well #5) | 1,319               | Ref. 20, p. 3; 68, p. 1 |
| 1N (Norton Well #1) | 385                 | Ref. 20, p. 3; 68, p. 1 |
| 2N (Norton Well #2) | 385                 | Ref. 20, p. 3; 68, p. 1 |
| 1E (Elder Well #1)  | 1,000               | Ref. 20, p. 3; 68, p. 1 |
| 2E (Elder Well #2)  | 1,000               | Ref. 20, p. 3; 68, p. 1 |

GPM = Gallons per minute

Therefore, the HRS dictates that the population be distributed equally among the wells (Ref. 1, Section 3.3.2).

The following example depicts how the population was calculated for each well.

Example Calculation: for each Ranney Well

The Wheeler Avenue Treatment Plant provides drinking water to 60 percent of the 58,000 people served by the Anderson Water Department (Refs. 4, p. 45; 58, p. 2; 88, p. 1). Sixty percent (60%) of population served is 34,800 (Ref. 4, p. 45).

Therefore 34,800 divided by 8 equals 4,350 people per well.

**Table O**  
**Population Served by Each Well That Supplies Water to the Wheeler Avenue Treatment Plant**

| <b>Well ID</b>                                             | <b>Number of People Served</b> |
|------------------------------------------------------------|--------------------------------|
| Ranney Well #1                                             | 4,350                          |
| Ranney Well #2                                             | 4,350                          |
| Ranney Well #4                                             | 4,350                          |
| Ranney Well #5                                             | 4,350                          |
| Norton Well #1                                             | 4,350                          |
| Norton Well #2                                             | 4,350                          |
| Elder Well #1                                              | 4,350                          |
| Elder Well #2                                              | 4,350                          |
| <b>Total Population served from the above listed wells</b> | <b>34,800</b>                  |

The populations included in the HRS documentation record at proposal were appropriately evaluated according to the HRS. The HRS directs that the drinking water should be considered from the point of withdrawal. As quoted directly above, Ranney wells #1, #4, and #5 were evaluated using the level of contamination documented in each well as consistent with the HRS; therefore, all of the target populations were appropriately identified and evaluated in the HRS Site score.

Further regarding the City's comment that the population should not be considered because the raw water is blended (i.e., the City has implemented a water treatment plan), the treatment of water prior to delivery is not considered in an HRS evaluation. Remediation actions such as water treatment do not impact the eligibility of identified target populations. As noted in the preamble to the 1990 HRS (55 FR 51532 Final Rule, Hazard Ranking System, December 14, 1990) page 51568:

HRS scoring will not consider the effects of responses that do not reduce waste quantities such as providing alternate drinking water supplies to populations with drinking water supplies contaminated by the site. In such cases, EPA believes that the initial targets factor should be used to reflect the adverse impacts caused by contamination of drinking water supplies; otherwise, a contaminated aquifer could be artificially shielded from further remediation.

Therefore, regardless of the water treatment that is currently in place on Ranney wells #1, #4, and #5, the EPA appropriately identified the target populations eligible for inclusion in the HRS evaluation.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.10.2 Level I Concentrations

Comment: The City stated the drinking water MCLs are for finished drinking water, not raw water tested in 2013, 2014, and 2018. The City added that the trace levels of contamination in raw water have no effect on the finished drinking water delivered to the Anderson community.

The City claims that only two wells—Ranney wells #1 and #5—had raw water samples above the MCLs for finished drinking water, that the exceedances were for two different substances (TCE and PCE), and that the levels of TCE and PCE in these wells have now fallen below finished drinking water state and federal standards.

Further describing the concentrations of VOCs detected, the City reiterated:

- None of the tests on raw water from Ranney wells #4 or #5 showed exceedances of the TCE MCL.
- None of the tests on raw water from Ranney wells #1 or #4 showed exceedances of the PCE MCL.
- None of the tests on raw water from the Anderson wells have shown exceedances of the cis-1,2-DCE MCL.
- None of the tests on raw water from the Anderson wells have shown exceedances of the vinyl chloride MCL.

Response: Level I concentrations were correctly identified at the Site in drinking water wells, Ranney wells #1, #4, and #5. Although MCLs are applicable to finished water for regulatory purposes, MCLs are one of the three eligible HRS drinking water health-based benchmarks that are used to establish level of contamination in the aquifer at the point of withdrawal, i.e., “raw” water sample in the aquifer. Hazardous substances associated with the site are documented in Ranney wells #1, #4 and #5 to be at concentrations above an HRS drinking water benchmark, above the cancer risk screening concentration for TCE and vinyl chloride, and above the MCL for PCE. For HRS purposes, Level I contamination occurs when the concentration of an HRS hazardous substance is present, in a sample meeting observed release criteria, and that concentration is above an applicable HRS identified benchmark (if more than one HRS applicable benchmark is available, the lowest applicable HRS benchmark can be used to establish Level I concentration in a target well). Thus, the Ranney wells are all appropriately evaluated as meeting HRS Level I concentration criteria as they have all been documented to contain contamination above an applicable HRS benchmark.

HRS Sections 3.3.2.1, *Level of contamination*, and 2.5, *Targets*, and their subsections contain the requirements for identifying Level I concentrations. HRS Section 3.3.2.1, *Level of contamination*, of the ground water migration pathway gives the general requirement to identify levels of contamination in the ground water migration pathway. It states:

Evaluate the population served by water from a **point of withdrawal** based on the level of contamination for that point of withdrawal. Use the applicable factor: Level I concentrations, Level II concentrations, or potential contamination. . . . if one or more samples meet the criteria for an observed release for the point of withdrawal, **determine which factor** (Level I or Level II concentrations) **applies to that point of withdrawal as specified in sections 2.5.1 and 2.5.2.** **Use the health-based benchmarks from Table 3-10** in determining the level of contamination.  
[Emphasis added]

Table 3-10 of the HRS lists the eligible HRS health-based benchmarks, for evaluating Level I concentrations of drinking water. It is as follows:

**TABLE 3-10—HEALTH-BASED BENCHMARKS FOR HAZARDOUS SUBSTANCES IN DRINKING WATER**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Concentration corresponding to Maximum Contaminant Level (MCL).</li> <li>• Concentration corresponding to a nonzero Maximum Contaminant Level Goal (MCLG).</li> <li>• Screening concentration for cancer corresponding to that concentration that corresponds to the <math>10^{-6}</math> individual cancer risk for oral exposures.</li> <li>• Screening concentration for noncancer toxicological responses corresponding to the Reference Dose (RfD) for oral exposures.</li> </ul> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

HRS Section 2.5, *Targets*, provides the instructions for determining whether targets are subject to actual contamination at Level I and Level II concentrations. It states:

-Level I:

-Media-specific concentrations for the target meet the criteria for an observed release (or observed contamination) for the pathway and are at or above media-specific benchmark values. **These benchmark values** (see section 2.5.2) **include both screening concentrations and concentrations specified in regulatory limits (such as Maximum Contaminant Level (MCL) values)**, or [Emphasis added]

...

Level II:

-Media-specific concentrations for the target meet the criteria for an observed release (or observed contamination) for the pathway, but are less than media-specific benchmarks.

...

HRS Section 2.5.1, *Determination of level of actual contamination at a sampling location*, provides instructions for determining whether Level I or Level II concentrations apply at a sampling location. It states:

Determine whether Level I concentrations or Level II concentrations apply at a sampling location (and thus to the associated targets) as follows:

- Select the benchmarks applicable to the pathway (or threat) being evaluated.
- Compare the concentrations of hazardous substances in the sample (or comparable samples) to their benchmark concentrations for the pathway (or threat), as specified in section 2.5.2.
- Determine which level applies based on this comparison.
- If none of the hazardous substances eligible to be evaluated for the sampling location has an applicable benchmark, assign Level II to the actual contamination at that sampling location for the pathway (or threat).

In making the comparison, consider only those samples, and only those hazardous substances in the sample, that meet the criteria for an observed release (or observed contamination) for the pathway, ...

HRS Section 2.5.2, *Comparison to benchmarks*, explains which benchmarks release concentrations need to meet, or exceed, to be considered Level I concentrations. It states:

Use the following media-specific benchmarks for making the comparisons for the indicated pathway (or threat):

- Use only MCLG values greater than 0.
- Maximum Contaminant Levels (MCLs)—ground water migration pathway and drinking water threat in surface water migration pathway.
- ....
- Screening concentrations for cancer corresponding to that concentration that corresponds to the  $10^{-6}$  individual cancer risk for inhalation exposures (air migration pathway) or for oral exposures (ground water migration pathway; drinking water and human food chain threats in surface water migration pathway; and soil exposure pathway).
- Screening concentration for noncancer toxicological responses corresponding to the RfD for inhalation exposures (air migration pathway) or for oral exposures (ground water migration pathway; drinking water and human food chain threats in surface water migration pathway; and soil exposure pathway).

Select the benchmark(s) applicable to the pathway (or threat) being evaluated as specified in sections 3 through 6. Compare the concentration of each hazardous substance from the sampling location to its benchmark concentration(s) for that pathway (or threat). Use only those samples and only those hazardous substances in the sample that meet the criteria for an observed release (or observed contamination) for the pathway. . . . If the concentration of any applicable hazardous substance from any sample equals or exceeds its benchmark concentration, consider the sampling location to be subject to Level I concentrations for that pathway (or threat). **If more than one benchmark applies to the hazardous substance, assign Level I if the concentration of the hazardous substance equals or exceeds the lowest applicable benchmark concentration.** [Emphasis added].

As identified in section 3.9, Releases to the Aquifer, of this support document, the HRS documentation record at proposal established observed releases of TCE, vinyl chloride, PCE, and cis-1,2-DCE to the aquifer.

Pages 44 and 45 of the HRS documentation record at proposal establish that the HRS criteria for identifying Level I concentration in a target well have been met. Pages 44 and 45 of the HRS documentation record at proposal provides the sample concentrations and the eligible HRS benchmarks used to establish that the sample concentrations are at or exceeded that benchmark:

**Table M**  
**Level I Groundwater Samples from Municipal Wells**

| EPA CLP ID # | Municipal Well ID | Hazardous Substance | Hazardous Substance Concentration (µg/L) | Benchmark Concentration (µg/L) | Benchmark * | Reference                                                                                                          |
|--------------|-------------------|---------------------|------------------------------------------|--------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------|
| E2T72        | Ranney Well #1    | TCE                 | 7.1                                      | 1.1                            | Cancer Risk | Ref. 2, p. 18; Contaminated Ground Water from Ranney Municipal Wells Sample Table of this HRS Documentation Record |

| EPA CLP ID # | Municipal Well ID | Hazardous Substance | Hazardous Substance Concentration (µg/L) | Benchmark Concentration (µg/L) | Benchmark *                | Reference                                                                                                              |
|--------------|-------------------|---------------------|------------------------------------------|--------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------|
| E2T73        | Ranney Well #1    | TCE                 | 7.0                                      | 1.1                            | Cancer Risk                | Ref. 2, p. 18; Contaminated Ground Water from Ranney Municipal Wells Sample Table of this HRS Documentation Record     |
| E2T76        | Ranney Well #4    | TCE<br>VC           | 1.7<br>1.3                               | 1.1<br>0.021                   | Cancer Risk<br>Cancer Risk | Ref. 2, p. 18, 22; Contaminated Ground Water from Ranney Municipal Wells Sample Table of this HRS Documentation Record |
| E2T84        | Ranney Well #5    | PCE                 | 5.4                                      | 5.0                            | MCL                        | Ref. 2, p. 10; Contaminated Ground Water from Ranney Municipal Wells Sample Table of this HRS Documentation Record     |

\*As specified in Ref. 1, Section 2.5.2, the lowest applicable benchmark concentration for each substance was applied.

As identified on pages 44 and 45 of the HRS documentation record at proposal, the TCE cancer risk screening concentration for drinking water is 1.1 µg/L; the vinyl chloride cancer risk screening concentration for drinking water is  $2.1 \times 10^{-2}$  µg/L; and the MCL for PCE is 5.0 µg/L.

For each of the contaminant concentrations identified at Level I concentrations in the HRS documentation record, if more than one applicable HRS benchmark was available the lowest applicable HRS benchmark was used to determine the level of contamination (see Table M above). Therefore, the concentrations of TCE, vinyl chloride, and PCE identified in the raw water in each of the Ranney wells are above a health-based HRS benchmark and were correctly identified as a Level I concentration. The City does not dispute the TCE and vinyl chloride cancer risk screening concentrations for drinking water, nor does it dispute the PCE MCL for drinking water.

The City is correct that the raw water in only two wells has exceeded the MCLs, but this is consistent with the scoring in the HRS documentation record at proposal and does not change the evaluation of the observed release, nor the Level I concentrations in the aquifer. As commented by the City, TCE concentrations in Ranney well #1 has exceeded the TCE MCL (in 2013 and 2014); Vinyl chloride concentrations in Ranney well #4 equaled the vinyl chloride MCL (in 2014); and PCE concentrations in Ranney well #5 has exceeded the MCL for PCE (in 2013 and 2014).

Cis-1,2-DCE was also found at the Site in Ranney wells #1 and #4, but it was not detected at or above any HRS benchmark (see Tables J and M on pages 40, 44 and 45 of the HRS documentation record at proposal).

As noted in Section 3.9, Releases to the Aquifer, of this support document, even if the EPA were to consider the City's 2018 analytical results, the overall combined site score and the overall individual Ranney wells #1, #4, and #5 site scores would remain the same as proposed.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

### 3.10.3 Potential Contamination

Comment: The City commented that the 2018 test results show that Ranney well #2, Elder well #1, Elder well #2, Norton well #1, and Norton well #2 exhibit not-detected results for VOCs in drinking water. That is, of the eight public drinking water wells supplying water to the Wheeler Avenue Treatment Plant in Anderson, five of the wells have no detectable concentrations of VOCs.

Response: Ranney well #2, Elder well #1, Elder well #2, Norton well #1, and Norton well #2 were correctly evaluated consistent with the HRS as subject to potential contamination. These five wells were correctly evaluated as eligible target wells drawing water from the aquifer being evaluated and are within the target distance limit and subject to potential contamination in the scoring of the Site.

In identifying the distance over which targets can be evaluated, HRS Section 3.0.1.1, *Ground water target distance limit*, in part states:

The target distance limit defines the maximum distance from the sources at the site over which targets are evaluated. Use a target distance limit of 4 miles for the ground water migration pathway, except when aquifer discontinuities apply ....

For sites that consist solely of a contaminated ground water plume with no identified source, begin measuring the 4-mile target distance limit at the center of the area of observed ground water contamination. Determine the area of observed ground water contamination based on available samples that meet the criteria for an observed release.

In determining the eligibility of potential target populations, HRS Section 3.3.2.4, *Potential contamination*, directs a scorer to:

Determine the number of people served by drinking water **from points of withdrawal subject to potential contamination**. Do not include those people already counted under the Level I and Level II concentrations factors. [Emphasis added]

Assign distance-weighted population values from table 3–12 to this population ...

Pages 47 through 48 of the HRS documentation record at proposal provides the wells subjected to potential contamination in the combined scoring of Ranney wells #1, #4, and #5 site score:

**Table Q**  
**Potentially Contaminated Wells and Population**

| <b>Distance</b>    | <b>Name of Potential Well(s)</b>                   | <b>Population Served</b> | <b>Value Assigned (HRS Table 3-12)*</b> | <b>References</b>            |
|--------------------|----------------------------------------------------|--------------------------|-----------------------------------------|------------------------------|
| 0-1/4 Mile         | Elder Well #1,<br>Elder Well #2,<br>Ranney Well #2 | 4350 times 3 =<br>13,050 | 16,325                                  | Ref. 1, Table 3-12; Figure 6 |
| >1/4 -1/2 Mile     | Norton Well #1,<br>Norton Well #2                  | 4350 times 2 =<br>8,700  | 3,233                                   | Ref. 1, Table 3-12; Figure 6 |
| >1/2 - 1 Mile      |                                                    |                          |                                         |                              |
| >1 - 2 Miles       |                                                    |                          |                                         |                              |
| >2 - 3 Miles       |                                                    |                          |                                         |                              |
| >3 - 4 Miles       |                                                    |                          |                                         |                              |
| <b>Total Value</b> |                                                    |                          | <b>19,558</b>                           |                              |

\*Other than karst

The assigned values are added  $16,325 + 3,233 = 19,558$

$19,558 \text{ times } 0.1 = 1,955.8$ , which is rounded to the nearest integer per the HRS to equal 1,956.  
(Ref. 1, Section 3.3.2.4)

#### **Potential Contamination Factor Value: 1,956**

For all scoring scenarios at the site (i.e., as a combined site or scoring the wells individually), Ranney well #2, Elder well #1, Elder well #2, Norton well #1, and Norton well #2 (five municipal wells) are eligible as potentially contaminated target wells for HRS scoring because they were within the 4-mile target distance limit of the Site. These wells were not evaluated as subject to actual contamination of VOCs and an observed release was not established in these wells in the HRS documentation record at proposal. The HRS documentation record at proposal evaluated the population associated with these five municipal target wells based on the distance from the center of the plume and assigned values from HRS Table 3-12, Distance-Weighted Population Values for Potential Contamination Factor for Ground Water Migration Pathway. Therefore, the EPA properly evaluated the potential contamination factor value in accordance with the HRS. The City did not challenge the population as being subject to potential contamination and the target populations apportioned to these wells remain as evaluated in the HRS documentation record at proposal.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

## **4. Conclusion**

The original HRS score for this site was 50.00. Based on the above responses to public comments, the site score remains unchanged at 50.00 and the independent score for each of the individual plumes included in the scoring at the Site remains unchanged at 50.00. The final scores for the Broadway Street Corridor Groundwater Contamination site are:

Ground Water: 100.00  
Surface Water: Not Scored  
Soil Exposure: Not Scored  
Air Pathway: Not Scored

HRS Score: 50.00