



Site Status Update North Railroad Avenue Plume Superfund Site Española, New Mexico (July 2021)

This fact sheet will tell you about...

- Site History and Background
- 2020 Five Year Review
- Recent Site Activities
- What Happens Next
- Where to Find More Information

Site History and Background

Contamination of water resources is a serious problem in many communities which can reduce the supply of available drinking water and present health risks to the public. To reduce these risks, the New Mexico Environment Department (NMED), in cooperation with the U.S. Environmental Protection Agency (EPA), is working to clean up contaminated groundwater at the North Railroad Avenue Plume Superfund Site (Site) in Española, New Mexico, and within the exterior boundary of Santa Clara Pueblo.

NMED discovered groundwater contamination at the Site in 1989 when two City of Española drinking water supply wells showed elevated concentrations of the chemicals tetrachloroethene (PCE) and trichloroethene (TCE). The City immediately stopped using those wells. PCE and TCE have not been detected in any other City drinking water supply wells based on routine sampling data collected through 2020.

The contamination at the Site is divided into two plumes: the Shallow Zone plume and the Deep Zone plume. The Shallow Zone plume once extended approximately three-quarters of a mile south of the source of contamination, the former Norge Town Laundry and Dry Cleaners facility located at 113 North Railroad Avenue. Today, only an isolated area

of contamination in the Shallow Zone remains near the Source Area.

The Deep Zone plume covers a smaller area extending north to the Plaza de Española and south to Santa Clara Bridge Road. The Deep Zone plume extends from approximately 55 feet to 260 feet underground.

Groundwater clean-up using enhanced reductive dechlorination

Enhanced reductive dechlorination (ERD) is the process of changing the conditions in groundwater to stimulate the breakdown of contaminants, such as PCE or TCE. This is achieved by injecting materials into the contaminated groundwater that will interact with the chemicals. The byproducts of this process are harmless.

EPA and NMED compared this method with other options, including a “pump and treat” system, and selected this method because it is the most likely option to meet clean-up goals within 30 years.

2020 Five Year Review

The purpose of a Five Year Review is to determine if a clean-up remedy at a site is still protective of human health and the environment and is functioning as designed. The EPA, in coordination with NMED, completed the third Five Year Review of the Site in August 2020. The 2020 Five Year Review report is available at www.epa.gov/superfund/north-railroad-avenue-plume.

Five Year Review Conclusions and Recommendations

The ERD treatment for the Shallow Zone plume functioned as designed and has been successful in reducing contaminant concentrations throughout the plume. **At the Source Area, PCE concentrations in groundwater have been reduced by approximately 90 percent** from the historic maximum of over 40,000 micrograms per liter. PCE concentrations beyond the Source Area have been cleaned up to below Federal Safe Drinking Water Act Maximum Contaminant Levels.

Previous Deep Zone treatment efforts, which were limited to five injection events primarily located at the Plaza de Española between April 2008 and November 2012, were less effective compared to treatment of the Shallow Zone plume during the same time period because it is more difficult for the injected materials to reach all areas of the Deep Zone due to its geology. Despite this, the latest Five-Year Review shows a successful clean up trend **in the two deepest areas of the plume, where PCE concentrations decreased 40 to 50 percent since 2009.**

The 2020 Five Year Review recommends continued monitoring to determine the effectiveness of alternative treatment injections that were pilot tested as part of an Enhanced Treatment Strategy (ETS) between February and March 2020. More information on the ETS is in the sidebar at right. NMED will use ongoing monitoring results to guide future Source Area and Deep Zone treatment injections.

Recent Site Activities

Additional Study of the Deep Zone Plume

The 2015 Five Year Review recommended additional work to better understand the hydraulic properties and contaminant distribution within the Deep Zone. In 2018 and 2019, NMED drilled several new boreholes and installed monitoring wells to gather this information. NMED also installed three new monitoring wells on the south side of the Site in March 2020 to confirm the southern extent of

Enhanced Treatment Strategy for the Source Area and the Deep Zone Contaminant Plume

NMED performed pilot testing of new injection approaches and materials in the Source Area and the Deep Zone between February and March 2020. The pilot test injections in the Source Area were designed to test new techniques to better distribute treatment materials in portions of the groundwater that have previously been difficult to reach.

The Source Area and Deep Zone pilot test injections were also designed to evaluate alternative treatment amendments that are specifically engineered to promote ERD.

Using new, state-of-the-art injection solutions in the pilot test allowed NMED to get the treatment solution into the deep aquifer more quickly. Continued groundwater monitoring in the pilot test areas will be necessary to determine the effects of the treatment amendments on the plume.

the Deep Zone contaminant plume. Based on this work, the extent of contamination in the Deep Zone is now fully understood.

Additional Deep Zone Injections

Consistent with recommendations from the 2020 Five Year Review and initial pilot test results, NMED is implementing a more aggressive injection schedule to treat the Deep Zone plume. NMED completed additional injections along the southernmost extent of Railroad Avenue in February 2021.

These injections targeted four Deep Zone areas where PCE and TCE concentrations are highest. Previous injections at this location, which last occurred in 2012, only targeted one of the areas.

NMED also installed one new monitoring well to help evaluate progress at this location.

2020 Groundwater Monitoring Results

NMED sampled all of the Site's groundwater monitoring wells in June 2020. Except for two remaining contamination areas near the Source Area, groundwater contaminant concentrations in the Shallow Zone continue to meet clean-up goals. The new injection techniques and materials used in the Source Area pilot test have been effective, with **contaminant concentrations decreasing significantly over just a few months from March to June 2020.**

NMED also observed evidence that the Deep Zone pilot test injections are working at the Plaza de Española; however, treatment materials do not distribute as easily in the Deep Zone as in the Shallow Zone. Therefore, NMED injected approximately 15,000 gallons of clean water between September 29 and October 2, 2020 to increase the distribution of the injected material. **NMED will evaluate how effective these activities are during analysis of results from the June 2021 sampling event.**

Removal of Previous Remediation Systems

In November 2020, NMED removed the two treatment plants and infrastructure that were used to treat Shallow Zone contamination at the Source Area and along Santa Clara Bridge Road. These treatment systems are no longer necessary to achieve clean-up goals.

2020 Air Monitoring Results

PCE contamination in groundwater can also contaminate indoor air quality when vapors rise out of the ground. In January 2021, NMED collected indoor and outdoor air samples at three buildings that may have been at risk of vapor intrusion located near the Source Area, including the Las Cumbres Community Services facility. NMED completed follow-up indoor air sampling and sub-slab (under the building foundation) soil vapor sampling at one of the buildings in April 2021. The sampling results indicate that indoor air and sub-slab soil vapor concentrations remain below EPA's

health-based screening levels and no additional action is needed at these buildings to protect human health. NMED will continue to monitor these buildings annually.

What Happens Next?

NMED continues to work to clean-up plan for the site, using funding from the New Mexico Legislature to ensure there are no delays in progress at the Site due to lack of funds.

NMED will complete a full analysis of results from the annual sampling of the Site-wide groundwater monitoring network in June 2021. NMED will document groundwater and air monitoring results in the 2021 annual monitoring report, which NMED anticipates will be available to the public by Winter 2021. NMED will issue an updated fact sheet that includes the progress of the new injections in Fall 2021.

NMED will install two new monitoring wells in 2021 to track the progress of the February 2021 Deep Zone injections. NMED also plans to inject additional clean water to help distribute the treatment solutions injected at the core of the plume.

NMED is finalizing a comprehensive update to the Conceptual Site Model – which is like a map of the underground contamination – to help refine NMED and EPA's understanding of the Site and reflect the new information gathered in 2020 about the southern boundary of the plume. The updated Site Model report will be finalized by Summer 2021. NMED will use the updated Site Model along with future groundwater sampling results to further evaluate and improve the injection strategy while monitoring clean-up progress.

For well owners:

To protect human health at the Site, the New Mexico Office of the State Engineer placed a restriction on the permitting of new wells and the transfer of water to existing wells within the boundaries of the contaminated groundwater plume at the Site in July 2001. The boundaries of the restricted area are depicted on the next page.

If you own a private drinking water well near the area depicted on the next page and would like your well to be tested for contaminants of concern associated with the North Railroad Avenue Plume Superfund Site, please contact Anthony McGlown, NMED Project Manager, at 505-660-8121 or by email at Anthony.McGlown@state.nm.us.

For more information, please contact:

Anthony McGlown, Project Manager
New Mexico Environment Department
505-660-8121
Anthony.McGlown@state.nm.us

Mark Purcell, Remedial Project Manager
U.S. EPA Region 6
214-665-6707 or 1-800-533-3508 (toll free)
Purcell.Mark@epa.gov

Dino Chavarria, Director
Santa Clara Pueblo Office of Environmental Affairs
505-692-6270
DinoC@santaclarapueblo.org

To receive future mailings electronically in portable document format (pdf), please contact Anthony McGlown, NMED Project Manager, by email at Anthony.McGlown@state.nm.us.

All inquiries from the news media should be directed to NMED's Director of Communications, Maddy Hayden, at 505-231-8800 or Maddy.Hayden@state.nm.us.

Information Repositories, which contain official documentation, including Five Year Reviews and other documents about Site activities, are located at the following locations:

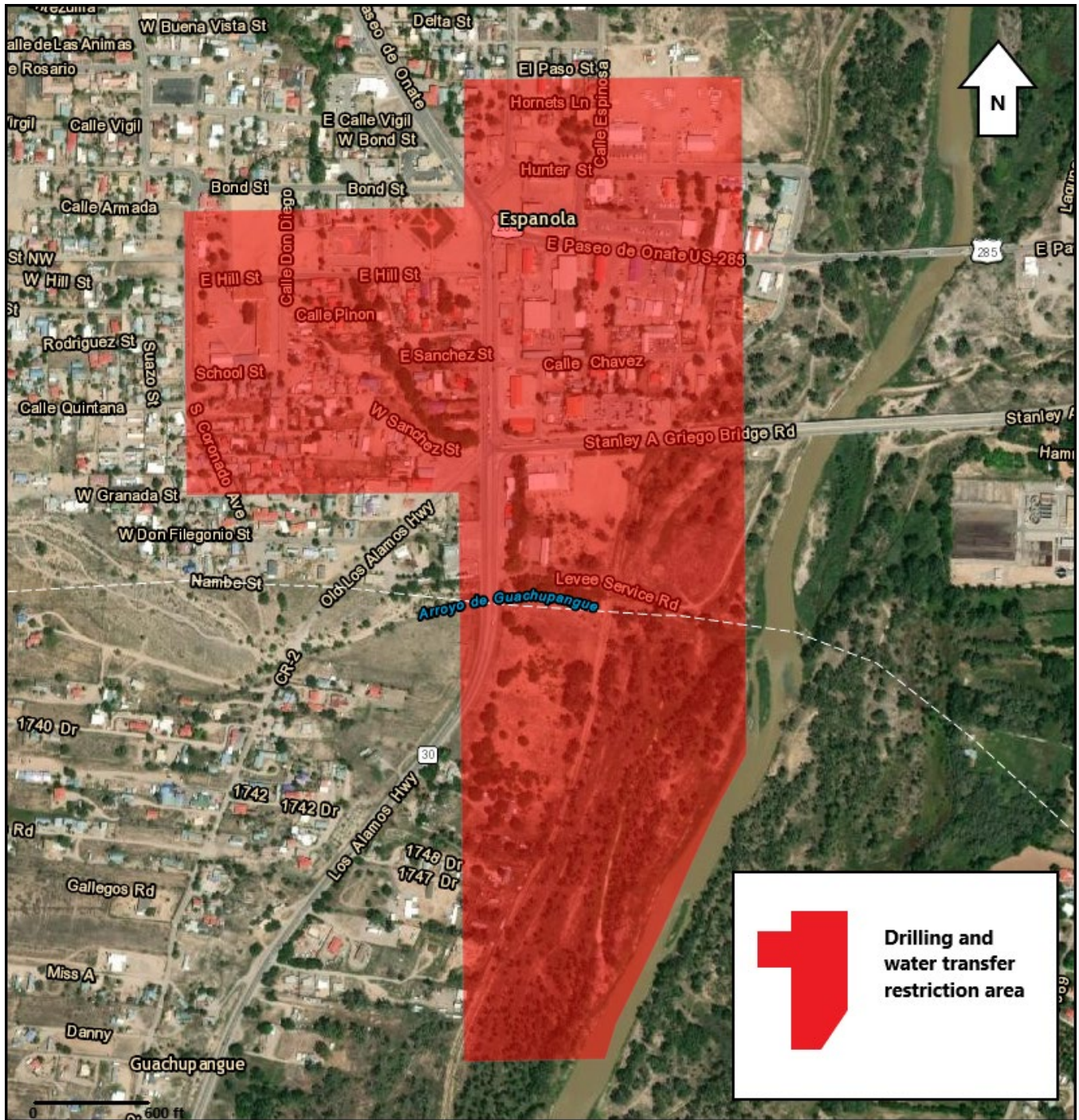
Española Public Library
314-A Onate Street
Española, NM 87532

New Mexico Environment Department
1190 St. Francis Drive, Suite N2300
Santa Fe, NM 87502-5469

Additional background information about this site can found at:
www.epa.gov/superfund/north-railroad-avenue-plume.

Frequently Asked Questions

NMED and EPA prepared a Frequently Asked Questions Community Fact Sheet for the North Railroad Avenue Plume Superfund Site (Site) in May 2020. The Fact Sheet provides detailed answers to frequently asked questions related to the Site and is available on NMED's website at: <https://www.env.nm.gov/gwqb/gw-faq/>.



**New Mexico Office of the State Engineer
Restriction Area for Drilling New Wells and
Water Transfer to Existing Wells**



**New Mexico Environment Department
North Railroad Avenue Plume
Española, New Mexico**