



EPA

North Indian Bend Wash Superfund Site

United States Environmental Protection Agency • Region 9 • December 2001

EPA Signs Record of Decision Amendment for Final Cleanup Actions

The U.S. Environmental Protection Agency (EPA), with concurrence from the Arizona Department of Environmental Quality (ADEQ) and the Arizona Department of Water Resources (ADWR), has selected a plan to address remaining contamination at the North Indian Bend Wash Superfund site (NIBW).

The final cleanup plan selected by EPA on September 27, 2001 is presented in a document known as a Record of Decision Amendment (ROD Amendment). This ROD Amendment is the third cleanup decision issued for NIBW. It revises the remedy that was selected in 1988 and is consistent with the cleanup actions selected in 1991. The ROD Amendment ties together in a legal document the actions necessary to complete soil cleanup and continue the existing groundwater cleanup efforts. It includes a combination of previously required and newly required actions and represents a comprehensive site cleanup strategy that will effectively remediate the contamination at NIBW over the long term.

In this ROD Amendment, EPA selected soil and groundwater remedies based on the Feasibility Study Addendum (FSA). This document identified and evaluated several alternatives to address environmental contamination at NIBW. EPA released the FSA and the Proposed Plan for cleanup on April 30, 2001 for public review and comment. EPA's responses to public comments are included in the ROD Amendment, which is now available for public review at the information repository listed at the end of this fact sheet.

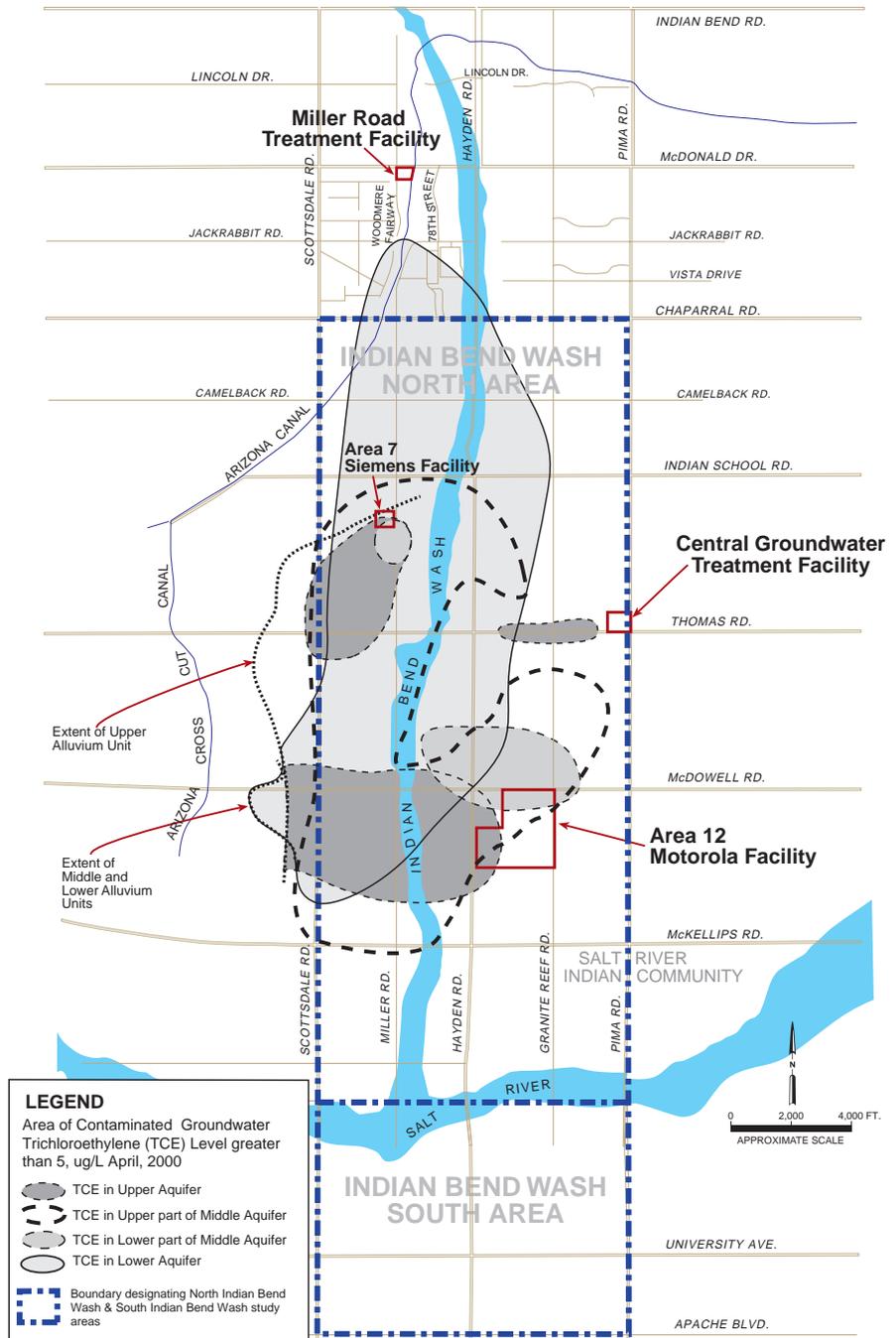


Figure 1: North Indian Bend Wash Superfund Site

BACKGROUND

As shown on Figure 1, page 1, the Indian Bend Wash site includes two study areas—North Indian Bend Wash (NIBW) and South Indian Bend Wash (SIBW). This fact sheet focuses on NIBW only. More information on SIBW can be obtained at the repository located at the Tempe Public Library, 3500 South Rural Road, Tempe, AZ 85282.

There are numerous industrial facilities located in the NIBW area. Up until the 1970s, before current environmental regulations existed, industrial solvents containing volatile organic compounds (VOCs) were typically disposed of directly onto the ground or in dry wells. These disposal practices, along with other releases, resulted in the present environmental conditions at NIBW. The groundwater contamination at NIBW was discovered in 1981 when elevated levels of VOCs including trichloroethylene (TCE), perchloroethylene (PCE) and chloroform were found in several Scottsdale-area drinking water wells. As a result, local water providers stopped using those wells for drinking water.

Since the contamination was discovered at the site, EPA, ADEQ, ADWR, the City of Scottsdale and other participating parties have been conducting studies to characterize the problem and to develop appropriate cleanup actions. The studies have shown that the contaminants of concern found in soil and groundwater at NIBW are VOCs. TCE is the primary VOC of concern, although PCE, 1,1-dichloroethene, trichloroethane, and chloroform have also been detected at lower concentrations. Only TCE and PCE are present in groundwater at levels above the federal Safe Drinking Water Act Maximum Contaminant Levels (MCL). MCLs are EPA's standards for drinking water quality.

The same VOCs found in groundwater were detected in soils in the immediate vicinity of several industrial facilities at NIBW. EPA determined that direct exposure to these contaminated soils was not a health risk. However, the levels of contamination in soil at some of the facilities had the potential to further contaminate the underlying groundwater. Therefore, soil cleanup actions were necessary at the facilities where contaminated soils were a continuing threat to the groundwater.

GROUNDWATER CONDITIONS

Groundwater at the NIBW site is present in three separated levels or layers. These layers are referred to as the Upper, Middle, and Lower Aquifers. Groundwater contamination has been identified in all three of the aquifers at NIBW. The Upper Aquifer is located at approximately 70 to 110 feet below ground surface (bgs), the Middle Aquifer is located at approximately 100 to 170 feet bgs, and the Lower Aquifer is located at approximately 310 to 700 feet bgs (see Figure 2). The groundwater contamination currently extends from McKellips Road to the south, Jackrabbit Road to the north, and Pima Road to the east. The western edge of the plume is just beyond Scottsdale Road in the southern portion of the plume but does not cross Scottsdale Road in the northern portion of the plume (see Figure 1, page 1).

The groundwater plumes at NIBW are defined by areas of TCE contamination at levels equal to or greater than the MCL which is 5 micrograms per liter (ug/l). Within the 150 monitoring wells located in the NIBW area, the levels of TCE currently range from non-detect to approximately 2,000 ug/l.

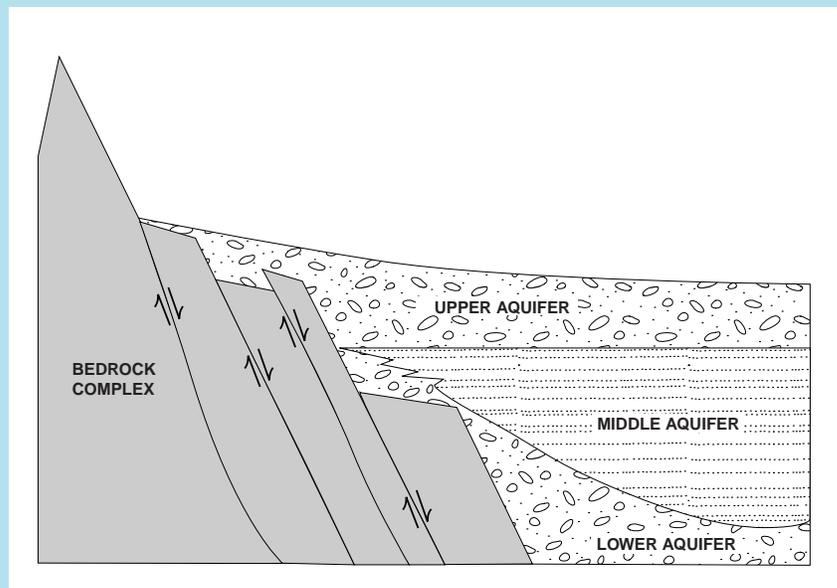


Figure 2: Hydrogeologic cross section

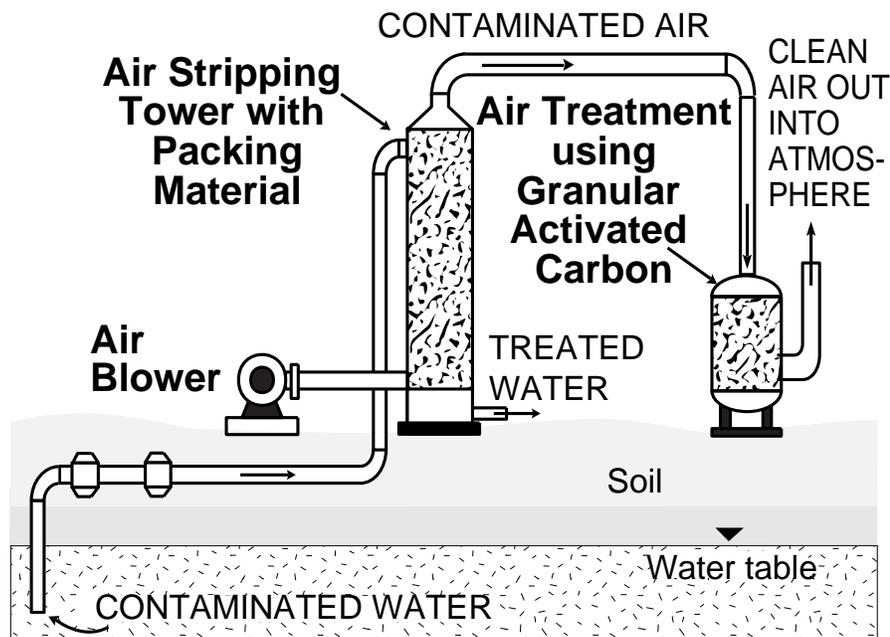


Figure 3: Groundwater treatment technology with Air Stripping Tower

EPA has negotiated two agreements or Consent Decrees (CDs) with various potentially responsible parties (PRPs) at NIBW. (The primary PRPs that EPA works with at the site are Motorola, Inc., Siemens Corp. and Smith-Kline Beecham.) The first CD was finalized in 1991 and the second in 1993. The NIBW CDs are legally binding agreements that outline how the PRPs will implement the decisions selected in the RODs. EPA anticipates that a third CD will be negotiated with the PRPs that will supersede the first two. This final CD will allow the site cleanup work to continue and ultimately be completed by the PRPs.

SUMMARY OF CLEANUP ACTIONS SELECTED IN SEPTEMBER 1988

The 1988 ROD focused on groundwater in the Middle and Lower Aquifers (*see* Groundwater Conditions, page 2). This ROD required construction of a groundwater extraction system and treatment plant to remove the TCE. The extraction system had

to establish and maintain a *containment* or *capture zone* within the Middle and Lower Aquifers so the contamination would not spread. The system used already existing groundwater extraction wells owned by the City of Scottsdale.

A treatment plant was built to treat the water pumped out of the ground by the extraction system. This plant is known as the Central Groundwater Treatment Facility (CGTF), or the Scottsdale Plant, located at Thomas and Pima roads. The CGTF treats the groundwater so it meets drinking water standards. This is done via an air stripping treatment method. In an air stripping tower, water is pumped to the top of the tower while a larger volume of air is drawn in from the bottom. The water trickles down through plastic “packing” material that increases the water’s exposure to the air. As the air flows past the water, it removes or “strips” the VOCs from the water (*see* Figure 3). The air containing the VOCs is then treated with a carbon filter which is then

HISTORY OF EPA ACTIONS

EPA has issued three different decision documents, also known as Records of Decision or RODs, at the NIBW site which are summarized below. The first was in 1988, the second was in 1991, and the final decision was recently issued on September 27, 2001. Each of these documents identifies required cleanup actions which are designed to work together to achieve the overall cleanup goals for NIBW which are to:

1. Protect human health and the environment by eliminating exposure to contaminated groundwater;
2. Restore the groundwater to drinking water quality;
3. Provide the City of Scottsdale with a water source;
4. Prevent the groundwater contamination plume from migrating (also known as “containment” or “capture”);
5. Reuse the treated water in accordance with Arizona’s Groundwater Management Act; and
6. Prevent soil contamination from impacting groundwater.

properly disposed. This treatment system will continue to operate until the NIBW groundwater cleanup objectives have been met.

Many groundwater monitoring wells were installed during the initial investigations at the NIBW Site. Installation of additional monitoring wells and continued groundwater monitoring was required by the 1988 ROD to ensure that extraction and treatment of the groundwater contamination was effectively capturing and reducing the groundwater contamination.

SUMMARY OF CLEANUP ACTIONS SELECTED IN SEPTEMBER 1991

The 1991 ROD focused on soil contamination at several industrial facilities and groundwater contamination in the Upper Aquifer. The soil cleanup technology selected in the 1991 ROD was Soil Vapor Extraction (SVE). SVE uses a vacuum pump to suck air out of the soil through special SVE wells. The VOCs are then removed from the air that is extracted using a carbon filter.

Soil cleanups using SVE were required at three different areas at NIBW: (1) Area 7, located at 2nd Street between Miller Road and 75th Street; (2) Area 8, located between Wells Fargo and Brown avenues and 2nd and 4th streets; and (3) Area 12, located between Hayden and Granite Reef roads and Roosevelt Street and McDowell Road.

SVE activities have already been completed at Area 8 and Area 12.

SVE activities at Area 7 are expected to be complete in early 2002.

The monitoring well network was expanded even further as part of the 1991 ROD requirements. Groundwater monitoring continues to ensure that extraction and treatment of the groundwater contamination is working to contain and reduce the plumes.

SUMMARY OF VOLUNTARY CLEANUP ACTIONS

The actions required by both the 1988 and 1991 RODs came to be known as the “**Required Remedy.**” These actions have all been completed or are ongoing (e.g., groundwater monitoring program). Following the construction and initial operation of the Required Remedy, it became

apparent that the groundwater contamination in the Middle and Lower Aquifers had not been contained as intended. Specifically, the groundwater plume in the Lower Aquifer was moving to the north and threatening the drinking water supply of the City of Paradise Valley. To prevent the contamination of Paradise Valley wells, the PRPs worked cooperatively with EPA and the State to identify and implement additional actions or “enhancements” that were necessary to capture the groundwater contamination plume. These actions were originally completed by the PRPs on a voluntary basis. The Required Remedy together with these additional actions came to be known as the “**Enhanced Remedy.**”

The following remedy enhancements have been completed:

- More monitoring wells were installed—the current groundwater monitoring system consists of over 150 wells;
- Two new extraction wells were installed to improve capture in the Lower Aquifer;
- An additional extraction well was connected to the Scottsdale Treatment Plant;
- A second treatment facility was built to treat water extracted in the northern portion of the site in order to protect the water supply of Paradise Valley. This treatment facility is known as the Miller Road Treatment Facility (MRTF);
- Soil cleanup actions using SVE were conducted at Area 6 which was located at the corner of Thomas and Pima roads;
- Groundwater extraction and treatment systems were installed at Area 7 and Area 12; and

- Upgrades were made to the Scottsdale Treatment Plant to enhance performance and reliability of the treatment system.

FINAL CLEANUP ACTION: SELECTED SEPTEMBER 27, 2001

The final cleanup action is a combination of the required actions from the 1988 and 1991 RODs and the voluntary actions implemented by the PRPs. The goal of this ROD Amendment is an overall, comprehensive site cleanup strategy that will effectively remediate the contamination at NIBW over the long term.

The final remedy includes the **Required Remedy** and the **Enhanced Remedy** as discussed above and includes the following additional components:

1. The voluntary actions that are part of the *Enhanced Remedy* become required actions;
2. Capture of the groundwater contamination plume is required in the central **and** northern portions of the site;
3. The extracted water in the northern portion of the site must be treated, but use of the MRTF is optional;
4. Treatment of extracted groundwater using air stripping in the central **and** northern portions of the site and at Area 12 is required;
5. At Area 7, extracted groundwater is primarily treated using ultra violet oxidation; air stripping is also used as a secondary treatment;
6. Treated water and groundwater left in place shall not contain VOCs at levels above the cleanup standards;

7. A priority pumping scheme will be implemented and spare pumping equipment will be purchased and used to minimize down time;
8. Periodic updating of the groundwater model is required to ensure that the extraction and treatment part of the cleanup strategy is working as predicted;
9. One new extraction well and one new recharge well will be installed at Area 7, and upgrades will be made to the Area 7 groundwater treatment plant to accommodate the increased capacity;
10. Localized capture of the groundwater plumes is required at Area 7 and Area 12; and
11. If groundwater data indicate that localized containment is not being achieved at Area 7 and Area 12, contingency actions will be evaluated and implemented.

To address public comments in a formal manner, EPA prepared a Responsiveness Summary. This Responsiveness Summary is part of the Record of Decision Amendment, which is available for public review in the information repository listed below.

NEXT STEPS

The cleanup remedies that were selected in 1988 and 1991 and the voluntary actions that are in place will continue to operate. EPA will issue notices to the PRPs inviting them to begin negotiating a third agreement with EPA and ADEQ for implementation of this final decision. Once an agreement has been reached, the final phase of cleanup activities at the site will begin.

As the project moves forward, EPA will continue to inform the Scottsdale area community and other interested parties about ongoing Superfund activities at North Indian Bend Wash. In addition, EPA will encourage continued involvement by the community in the cleanup process, especially through the NIBW Community Involvement Group or CIG. The CIG was established several years ago as a way to regularly meet with citizens regarding site issues. This group is open to all interested residents in the Scottsdale area. Please contact any of the agency staff listed below for more information on the NIBW CIG.

HOW EPA SELECTED THESE REMEDIAL ACTIONS

EPA worked closely with ADEQ and ADWR to select the best overall remedy for the NIBW site. The remedial actions chosen for addressing groundwater and soil contamination were based on several factors including the ability to protect human health and the environment, compliance with state and federal standards, cost-effectiveness of the remedies, and state and community acceptance. EPA invited the public to comment on the Feasibility Study Addendum and EPA's Proposed Plan during a 60-day public review and comment period (April 30, 2001 through June 28, 2001). During this period, EPA hosted a public meeting to hear public concerns, answer questions and receive public comments. These comments were considered before a final cleanup decision was made.

INFORMATION REPOSITORY

The Administrative Record is made up of all documents upon which EPA relies to make decisions about site cleanup. The Administrative Record for the NIBW Superfund site, as well as additional related documents, are located at:

Scottsdale Civic Center Library (S.W. Room)

3839 N. Drinkwater Blvd.

Scottsdale, Arizona

(480) 312-2320

Hours: Mon - Thurs, 9 a.m. to 9 p.m.

Fri & Sat, 10 a.m. to 6 p.m.

Sunday, 1 p.m. to 5 p.m.



NORTH INDIAN BEND WASH SUPERFUND SITE UPDATE

FOR MORE INFORMATION

If you have questions or concerns regarding the North Indian Bend Wash Superfund site, please contact any of the EPA or ADEQ staff listed below:

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San Francisco, CA 94105

You may reach either Melissa or Vicki **toll-free at 1 (800) 231-3075.**

Please leave a message and your call will be returned.

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