North Indian Bend Wash Superfund Site

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA

Scottsdale, Arizona December 2010

Miller Road Treatment Facility Update

This fact sheet is to update community members on the North Indian Bend Wash (NIBW) Superfund site's Miller Road Treatment Facility Long-Term Improvements. The U.S. Environmental Protection Agency (EPA) has been working closely with the NIBW Participating Companies (PCs), the City of Scottsdale, and the Arizona Department of Environmental Quality (ADEQ) to ensure that all operations associated with this site continue to be protective of human health and the environment. What follows is a summary regarding the Long-Term Improvements for the site.

Miller Road Treatment Facility (MRTF)

The Miller Road Treatment Facility (MRTF) is one of four NIBW groundwater treatment plants built (and in some cases operated) by the Participating Companies (PCs), with oversight by EPA and ADEQ. Following two accidental releases of trichloroethylene (TCE) to the Arizona American Water Company's (AAWC's) drinking water system in October 2007 and January 2008, extensive evaluation was done to identify options for the MRTF. The releases were reported in detail in February and May 2008 fact sheets and subsequent community meetings. Below is an update on the options and factors that have been considered for the MRTF long-term improvements.

MRTF Interim Measures

As reported to the community in 2008, water from NIBW extraction well PCX-1 (owned by Salt River Project) indicates concentrations of TCE at approximately 75 parts per billion or ppb. Well PCX-1 is physically separated from the Arizona American drinking water system. This well is being treated at the MRTF and discharged to the Arizona Canal under an approved permit. The treated water is not being used in the Arizona American drinking water system. Under the Interim Operations Plan, operations that extract and treat the water from well PCX-1 by removing the TCE through use of an "air stripper" have continued. While EPA's regulatory cleanup standard for TCE in groundwater is the maximum contaminant level (MCL) of 5.0 ppb, treatment using air stripping is effective at reducing TCE concentrations to less than 0.5 ppb, the laboratory detection limit.

Well PV-15 (owned by AAWC) averages TCE concentrations between 2.0 – 5.0 ppb with seasonal variation. PV-15 is treated through an air stripper at the MRTF and delivered to AAWC. Samples from PV-15 indicate TCE levels of 4.1 ppb in July 2010, 4.7 ppb in August 2010, 5.0 ppb in September 2010, and 4.6 ppb in October 2010.

As of September 2010, AAWC began treating well PV-14 (owned by AAWC) through an air stripper at the MRTF although this well shows TCE concentrations only slightly above the laboratory detection limit of 0.5 ppb. Samples from PV-14 indicate TCE levels less than 0.5 ppb in July 2010, 0.5 ppb in August 2010, 0.7 ppb in September 2010, and 1.8 ppb in October 2010.

The air stripping treatment at MRTF is treating the extraction wells PV-14, PV-15 and PCX-1 to TCE concentrations below the laboratory detection limit of 0.5 ppb. Effluent samples (water coming out of the treatment system) since the start of the 2008 MRTF Interim Operations have indicated TCE levels below the laboratory detection limit of 0.5 ppb. All costs for the remediation at the MRTF are paid by the NIBW PCs.

MRTF Long-Term Improvements

Extraction and treatment of water from PCX-1 and PV-15 at the MRTF are part of the plan to keep contaminated groundwater in the lower aquifer from moving northward into the AAWC wellfield. As part of this effort, EPA required the PCs to evaluate different options for handling the water from PCX-1 for the long term. The costs for construction and implementation of the MRTF Long-Term Improvements will be paid by the NIBW PCs.

Drinking Water Options

Several options were reviewed which included delivery of treated PCX-1 water for drinking water purposes. Under this option, EPA required that a "secondary fail safe" be in place for well PCX-1 as a back-up measure. EPA has defined a "secondary fail safe" as:

- Blending PCX-1 water with sufficient additional water to meet TCE concentrations below the maximum contaminant level of 5.0 ppb, or
- Storage of PCX-1 water with water from other sources to meet TCE concentrations below the maximum contaminant level of 5.0 ppb, or
- Treating well PCX-1 through two air stripper towers (treatment through one air tower followed by treatment through a second air tower), or
- Adding another treatment process

Site Background

The entire area of the Indian Bend Wash Superfund Site (IBW Site) covers approximately 13 square miles in Scottsdale and Tempe, Arizona. EPA divided the Site into two areas known as North Indian Bend Wash (NIBW) and South Indian Bend Wash (SIBW). There are numerous industrial facilities located in the vicinity of the IBW Site. 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 soil and groundwater contamination at the Site. Land use in the vicinity of the IBW Site includes residential, industrial/commercial, agricultural, public and private recreational (parks, golf courses, playing fields, etc.), undeveloped open space, and waterways. EPA and the State of Arizona have been involved in investigations and cleanup activities at the IBW Site since the initial discovery of VOCs in the groundwater in 1981. The IBW Site (NIBW and SIBW together) was placed on EPA's National Priorities List (NPL), or Superfund list, in 1983.

Reinjection Options

Additional options were reviewed including reinjecting the treated effluent from PCX-1 back into the lower aquifer under various scenarios.

In March 2010, the PCs submitted the most recent reinjection workplan. This option includes adding an injection well north of PCX-1 to inject treated water from PCX-1 back into the aquifer. At times when SRP needs the water from PCX-1, the treated water would be discharged to the Arizona Canal. Well PV-15 would continue to be treated with air stripping at the MRTF and the treated water delivered to AAWC.

Selected Reinjection Option

EPA solicited input and received consensus from ADEQ, City of Scottsdale, and Salt River Project on the March 2010 reinjection option. These parties have agreed and settled on reinjection as the final long-term improvement for the MRTF. As a result, the workplan was approved in September 2010 and we expect to begin implementation in 2011.

Community Meetings

Since October 2007, EPA has participated in three Community Involvement Group (CIG) meetings to discuss various options. These CIG meetings included one held in February 2010 where the reinjection option was discussed and agreed upon. Following this meeting, EPA also received letters of support for the reinjection option from community members. The next community meeting will be held in February 2011 to provide an overview of the selected reinjection option.

This option is consistent with our main priorities: protecting the community, correcting past mistakes and deficiencies, and ensuring that the treated groundwater is put to beneficial use.

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NIBW Site Information

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Repository

Scottsdale Civic Center Library
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Information on this Site is can also be found on the following EPA website:
www.epa.gov/region09/northindianbendwash

You may also contact the Arizona Department of Environmental Quality (ADEQ):

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ADEQ's site website:
http://www.azdeq.gov/environ/waste/sps/phx.html

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