

Trichloroethylene (TCE) and IRWD Drinking Water Frequently Asked Questions

1. Does IRWD's drinking water contain TCE?

No. TCE has never been detected in the drinking water served to any IRWD customers. IRWD obtains drinking water from two sources: 1) water imported by the Metropolitan Water District of Southern California from the Colorado River or Northern California, and 2) locally-available groundwater. Most of IRWD's groundwater supplies are obtained from its Dyer Road Wellfield, which consists of 18 drinking water wells located in Santa Ana. IRWD does not have any drinking water wells that are located in the TCE plume emanating from the former El Toro Marine Corps Air Station (ETMCAS). IRWD's Dyer Road Wellfield is nearly 3.5 miles from the leading edge of the ETMCAS plume.

TCE has never been detected in the IRWD drinking water distribution system, which is routinely tested for TCE. In addition its standard testing protocol, IRWD has performed specific testing on five separate occasions since May 2006 at seven locations throughout the Woodbridge area; no TCE was detected in IRWD's drinking water.

2. What about the IRWD 2008 Annual Water Quality Report shows trace levels of TCE in IRWD's?

In 2007, TCE was detected at trace levels in one of IRWD's 18 drinking water wells, Well No. 3, located in Santa Ana. At the time the TCE was detected in this well, it was removed from service. IRWD's 2008 Annual Water Quality Report, which reflects the results of testing performed in 2007, reported water quality sampling data from all water sources to the IRWD drinking water system.

The concentration of TCE noted in the 2008 IRWD water quality report for Well No. 3 indicated a range of detections from non-detect to 0.8 parts per billion. The laboratory detection limit for TCE is 0.5 parts per billion. The allowable California Safe Drinking Water standard is 5.0 parts per billion – more than six times the highest amount found in IRWD's Well No. 3.

Note: The 2009 IRWD Annual Water Quality Report will show that no TCE was detected in any IRWD wells or drinking water in 2008.

3. Is IRWD blending water from multiple sources, thereby masking the presence of contaminants such as TCE in its drinking water system?

No. IRWD monitors the quality of water from each of its drinking water sources. When TCE was detected in Well No. 3 in 2007, IRWD decided to turn off the well and utilize other water sources.

IRWD is a government agency that follows stringent state and federal water quality regulations to monitor and treat drinking water and abide by Safe Drinking Water Act standards. In California, the California Department of Public Health (DPH) is the oversight agency that issues operating permits for water utilities and ensures that they comply with the applicable standards. DPH has established the maximum contaminant levels (MCLs) allowed in drinking water and DPH agrees that IRWD is in full compliance with these and all other standards and regulations. In the case of Well No. 3, blending of the water from this well is allowed by DPH, but IRWD has opted to keep this well out of service.

4. So what is the source of the TCE contamination shown in the water quality sampling of Well No. 3?

The Orange County Water District (OCWD), which is the agency responsible for protecting groundwater quality in the basin, has determined that the source of the TCE contamination which appeared in Well No. 3 is from nearby industries and businesses in the Santa Ana area, not the TCE plume from the former ETMCAS. OCWD, in cooperation with IRWD, has undertaken a program to better understand the source and magnitude of the TCE contamination in Santa Ana by installing six monitoring wells near IRWD's Well No. 3. OCWD has also compiled information obtained from State regulatory agencies identifying businesses in the area which have had past releases of TCE.

5. Is there a connection between the TCE detected in Well No. 3 in Santa Ana and the TCE plume from the former ETMCAS?

No. While TCE contamination was identified at IRWD's Well No. 3 in Santa Ana, many samples of groundwater analyzed by OCWD and the U.S. Department of the Navy from wells located between the ETMCAS TCE plume and the IRWD's drinking water wells in Santa Ana have not detected any TCE. This clearly shows that the ETMCAS plume is not responsible for the TCE contamination at Well No. 3.

6. Isn't the TCE plume emanating from the former ETMCAS changing its shape?

Yes. The objective of the TCE plume clean-up program is to reduce the size and concentration of the plume. Because groundwater tends to move "down-gradient" (toward lower pressures), the size, shape, depth and location of a plume will change over time. Since the clean-up of the TCE plume at the former ETMCAS began, moderate changes in the shape and location of the plume were expected and have been observed.

The shape and location of the TCE plume is based on data obtained from wells monitored by OCWD and the Navy. Water samples from these wells are tested on a quarterly basis and, from these tests, the lateral and vertical dimensions of the plume are calculated using proven scientific methods. The dimensions of the plume are included in updated maps of the TCE plume which are available for public viewing in groundwater monitoring reports at the Heritage Park Library.

The most current map shows the leading edge of the plume (where TCE has been detected) is located approximately three miles from the former ETMCAS, near Culver Drive in Irvine. The plume is not threatening San Diego Creek because gradient pressures in the aquifer push the water down and away from, not up and towards, San Diego Creek. At this time we estimate the depth of the TCE plume ranges from 150 to 500 feet beneath the Woodbridge area in Irvine.

7. Since TCE is "volatile", do IRWD customers risk exposure to TCE vapors while taking a shower?

No. IRWD's drinking water has no detectable levels of TCE, so there is no risk of exposure to TCE "vapors" while taking a shower. Furthermore, pink scum that may be present in shower stalls is not linked to TCE; it is a type of bacteria (*Serratia marcescens*) that can be removed with a common household cleaning product.

8. Is there an elevated frequency of cancer in the Woodbridge area of Irvine?

No. Inquiries with the California Department of Public Health's California Cancer Registry show that this agency has not identified any elevated cancer frequencies in the Woodbridge area of Irvine. The mission of the California Department of Public Health's California Cancer Registry is to collect statewide data, and conduct surveillance and research into the causes, controls, and cures of cancer and communicate the results to the public. Residents that concerned about cancer frequencies in the Irvine area should contact Dr. Thomas Mack of the California Cancer Registry at (323) 865-0445.

9. Is there a risk of TCE vapors rising out of the TCE plume from the former ETMCAS base and contaminating homes and businesses over the plume?

No. The United States Environmental Protection Agency (US EPA) has determined that there is no risk of TCE vapors emanating from the TCE plume and contaminating existing homes and businesses located above the plume. The US EPA will continue to evaluate the groundwater data from the Woodbridge area to ensure that the plume does not present a risk for residents in this area. Contact Rich Muza of the US EPA, at (415) 972-3349 or muza.richard@epa.gov for further information.

It is incorrect to conclude that TCE vapors could be present in homes overlying the plume simply because TCE vapors have been found in homes in other areas of the United States where TCE is present in groundwater. The following three existing conditions prevent TCE vapors from migrating from the plume to the ground surface: 1) layers of soil, rock and water, as confirmed by technical mapping of the groundwater basin, seal off and restrict the ability of TCE (in liquid or gaseous form) from moving through these layers to the surface; 2) TCE dissolved in water can only transform into a gaseous state under dry conditions, which is impossible in the Woodbridge area due to the observed presence of layers of shallow groundwater without TCE; and 3) the natural vertical flow of the groundwater is downward, thereby causing the plume to also trend downward, not upward toward the ground surface. Because of these conditions, it is impossible for TCE vapors to emanate from the plume and migrate through the soil to the surface.

10. Hasn't there been an on-going effort to communicate information about the ETMCAS TCE plume to homeowners and the public in the Woodbridge area and throughout IRWD's service area?

Yes. Since 1994, IRWD has been informing its customers of the contamination at ETMCAS and the program to clean up the contamination. In April 1999 a sequence of four focus groups was convened to obtain public input on the project. In September 2000 the "Irvine Desalter Communications Advisory Group" was formed to obtain further input regarding how the project should be communicated to the public. Over the years many articles have been published in the Irvine World News, the Orange County Register, and the Los Angeles Times and through the monthly IRWD billing inserts. Since 1994 the Navy has held community Restoration Advisory Board (RAB) meetings on a quarterly basis to review the status of the ETMCAS TCE investigation and remediation. IRWD's role in the clean-up of the plume has been recognized by groups including the American Society of Civil Engineering, the American Public Works Association, the California Water Environment Association, the Orange County Engineering Council Engineering, and the Assembly of the State of California.