



# EPA

# Montrose Superfund Site

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • July 2002

## Kenwood Avenue Cleanup is Complete EPA Continues Work at the Montrose Site

This fact sheet is a routine update for residents and other interested parties about EPA activities at the Montrose Chemical Superfund Site. EPA investigates and cleans up polluted sites under a program called Superfund. The goal of this program is to protect human health and the environment.

The Montrose Chemical Corporation of California (Montrose) manufactured the insecticide DDT at a chemical manufacturing plant located at 20201 S. Normandie Avenue near Torrance, California, from 1947 to 1982. The Montrose plant was dismantled in 1984 and the property is now fenced and covered with asphalt.

EPA has been investigating and cleaning up places contaminated with DDT and other chemicals from the former Montrose plant. EPA's investigation looked at soil at the former Montrose plant, groundwater where contaminants have leaked into the ground, residential soil and produce near the former Montrose plant, and stormwater drainage pathways leading from the plant.

### What is DDT?

DDT was a very widely-used pesticide in the United States until its sale was banned in 1972. It is still used in many countries today to fight malaria spread by mosquitoes. DDT is a *persistent* chemical, meaning that once it is put on soil it lasts a long time (decades) because it breaks down very slowly. It usually is present as fine particles that stick strongly to soil. It is not a gas. DDT in soils *at high enough levels* may cause health problems to persons who swallow the soil or breathe soil dust for a long enough time.

### Is DDT only found in soil near Montrose?

No. DDT can be found in soil at low levels in south Los Angeles because DDT was so widely used in the past. EPA took more than 70 samples of surface soil in residential areas two to four miles away from

*Cont'd. on page 2*

### Points at a Glance

- EPA cleaned up soils in a former drainage ditch along Kenwood Avenue
- EPA's investigation indicates no other areas of high DDT in residential soils
- No DDT was found in fruits or leafy vegetables; some DDT was found in homegrown eggs; EPA is continuing to study root vegetables
- EPA will evaluate cleanup alternatives for soil contamination at the Montrose plant property with public input
- EPA will design and build the groundwater cleanup system selected with public comment in 1999.

### We Want Your Input

EPA would like to continue to work with the community near the Montrose site to make sure we address your concerns and answer your questions.

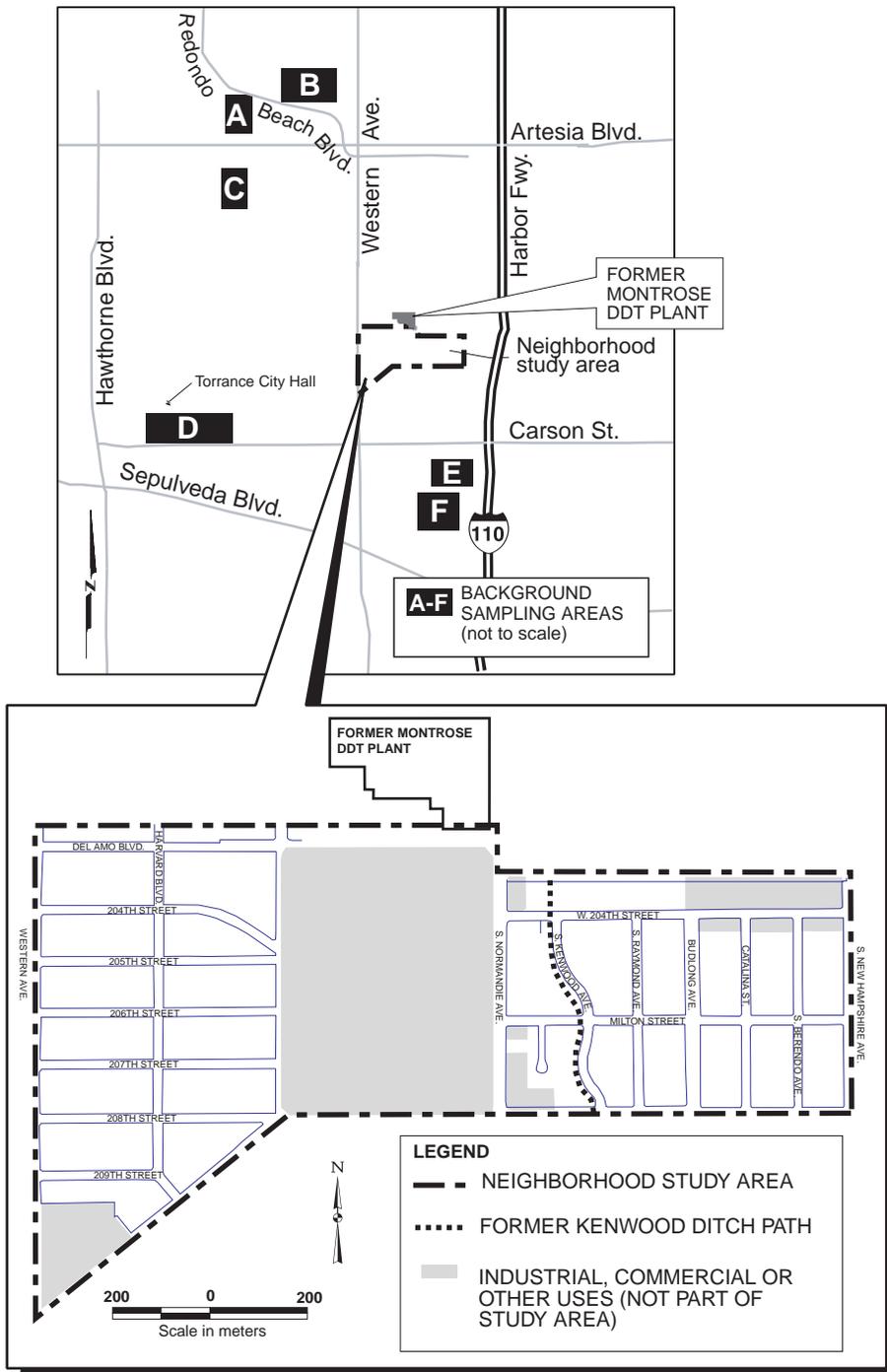
If you have questions or input on our activities, including how best to keep you involved, please call one of the contacts listed on the back page.

the former Montrose plant (See figure 1). The sampling showed that it is common to find one to three parts per million (ppm - a measure of how much DDT is in soil), and up to about 10 ppm of DDT, even in soil not close to Montrose. These are very low levels of DDT that do not pose a health concern. This is called *background DDT*. EPA has been checking to see where there might be DDT from the former Montrose plant at levels *higher* than the background DDT. EPA also has evaluated whether such higher levels in soils might pose a health risk.

**What levels of DDT in soil are a problem?**

DDT in soil cannot harm people unless they swallow the soil or breathe and swallow dust. Persons are not in contact with soil deep under the ground unless it is dug up and brought to the surface. Still, EPA considers not only whether the top soil is a problem, but also whether soils might be a problem if they were dug up in the future.

DDT levels up to 170 ppm in soil pose insignificant risks of health problems even to someone swallowing the soil every day for 30 years. DDT in soil does not pose a danger from short-term contact until DDT levels in the soil are at least 1000 ppm (See Figure 2.)



**Figure 1:** Location of former Montrose DDT Plant, background and neighborhood study areas.

## What did EPA find in residential soils and produce?

EPA conducted an extensive investigation between 1994 and 2000 in residential areas. Our sampling looked for DDT and other Montrose chemicals that might have: 1) blown off the Montrose plant as dust when the plant was operating, 2) floated away in drainage water that ran off the plant property, 3) been dumped by Montrose in waste fill material, and 4) been absorbed into homegrown fruits, vegetables, and eggs. Since 1999, we have collected and analyzed more than 2000 surface and underground soil samples for DDT and other Montrose chemicals in residential areas within 30 square blocks to

the south, southeast, and southwest of the former Montrose plant property. EPA also has results for 41 samples of homegrown fruits and leafy vegetables and 12 samples of homegrown chicken eggs. These are the highlights of EPA's findings:

- EPA found higher than usual DDT levels in soil along a stormwater drainage pathway on Kenwood Avenue. EPA has now performed a cleanup of the Kenwood drainage pathway - see the next section of this fact sheet.
- Outside of Kenwood Avenue, levels of DDT in soil were very similar to the low background DDT levels (one to three ppm, up to 10 ppm). These low DDT levels do not pose a health risk.

- In 1994, EPA found two properties on 204<sup>th</sup> Street which had DDT-contaminated fill material from Montrose. These properties were cleaned up in 1996 to 1998. No additional DDT-contaminated fill was found in other parts of the neighborhood.
- No DDT was found in homegrown fruits and leafy vegetables in the neighborhood. A second study looking for DDT in root vegetables has been performed and results will be coming soon.
- EPA found DDT in all homegrown chicken eggs sampled. DDT can build up in chicken eggs, so even very low background DDT in soil may result in some DDT in homegrown chicken eggs.

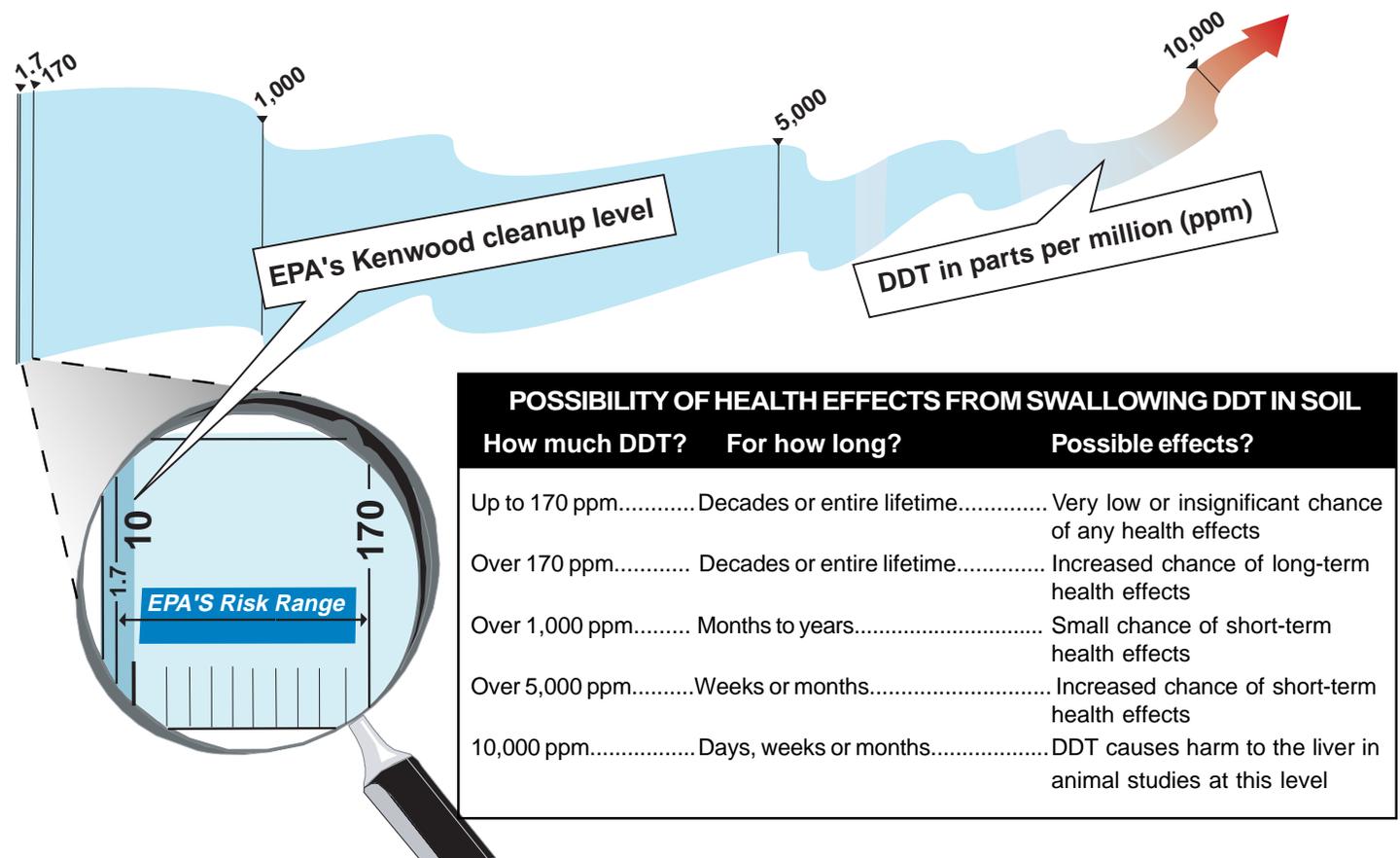


Figure 2: Possible health effects from swallowing DDT in soil

Residents wishing to consume homegrown eggs should read a fact sheet by the California Department of Health Services (DHS) issued in 2000. EPA and DHS have copies of this fact sheet.

- EPA found three yards with higher than usual levels of DDT outside of Kenwood Avenue. However, DDT was applied as a pesticide on these yards by owners in the past. There is no evidence the DDT in these yards came from Montrose. EPA did not clean up soils in these yards.
- A sampling by the Agency for Toxic Substances and Disease Registry (ATSDR) of more than 700 blood samples from local residents

## HIGHLIGHTS OF THE KENWOOD AVENUE CLEANUP

- Soils were removed from front yards within the Montrose storm water pathway.
- Front yard soils that were removed were replaced with clean soil.
- A thin layer of DDT sediment material was found and removed at three of 22 properties.
- Yards were restored with new landscaping, masonry, concrete, fencing, plants, etc.
- Yards are now similar to the average yard in Los Angeles County.
- **Yards are now safe for residential purposes with respect to DDT.**

showed no higher levels of DDT in blood than are present on average in the U.S. population.

Some of these findings were presented in more detail in a November 1999 fact sheet issued by EPA.

### The Kenwood Cleanup

With input from long-time residents, EPA discovered the remnants of a former storm-water drainage ditch that came from Montrose and used to run through front yards on the west side of Kenwood Avenue (See figure 1).

Between the 1940s and 1970s, this ditch carried drainage water from the former Montrose plant that sometimes contained DDT. In 2000, EPA collected more than 1000 samples along this stormwater pathway. These samples showed that there were higher-than-usual levels of DDT in some soils in the front yards on the west side of Kenwood Avenue. There was no evidence of a drainage ditch or elevated DDT levels on the east side of Kenwood Avenue.

With a few exceptions, most of the elevated DDT on Kenwood Avenue was in soils deeper than 1.5 feet below the ground. EPA took additional samples in several back yards where owners said soil was possibly moved. No elevated DDT levels were found in back yards.

EPA offered to remove DDT-contaminated soil from all 25 properties within the storm water pathway. The goal of the cleanup was to remove the soil that had elevated DDT levels because of the former storm water pathway.

The cleanup was voluntary for homeowners. Twenty-two

homeowners decided to have their yards cleaned up and restored. Only one homeowner whose yard had elevated DDT did not allow EPA to do the cleanup.

Starting in July 2001, EPA began the removal of soils in front yards of homes along Kenwood Avenue. The steps of the cleanup included 1) preparation and protection of the yard, 2) excavation of the DDT contaminated soil, 3) backfill of the hole with clean soil, 4) restoration of landscaping, concrete, asphalt, fencing, retaining walls and other yard features. EPA performed extensive dust suppression and extensive air/dust monitoring during the excavation work. This monitoring showed that there were no significant releases of dust from the excavations and the cleanup work was safe.

EPA placed the excavated soil into secure containment cells at the former Montrose property. Each containment cell consists of an enclosed berm (a raised mound). The soil sits inside the berm in a sealed wrap of polypropylene liners and geotextile fabric. Montrose is maintaining the cells and the former plant property, with EPA oversight. EPA plans to store the soil in these cells temporarily until EPA decides how to clean up all the soil at the Montrose plant property.

The Kenwood Avenue cleanup was finished in February 2002. Completion letters were sent to homeowners detailing the work that was done on their property. EPA's cleanup made these properties safe for residential purposes with respect to DDT.

## What about soil at and near the former Montrose plant?

The soils under the asphalt at the former Montrose plant site are highly contaminated with DDT and chlorobenzene, another chemical that Montrose used to make DDT. No one is in contact with these soils today, and they are not causing harm to people now. However, EPA is evaluating options for a permanent remedy to address these soils. This may involve placing a very strong cap over the whole property, or digging up the soils and treating them to remove the DDT. EPA is doing what is called a *feasibility study* to evaluate and compare these cleanup options. We plan to present the study to the public for comment, along with a proposal for the cleanup, to help us decide how to address the former plant soils. In order to finish the feasibility study, we need to take some more samples

and perform some tests to determine which cleanup methods will work. Many of these tests are done in the laboratory, but over the next six months to a year, you will see EPA and representatives of Montrose Chemical at the plant property taking samples and performing field tests.

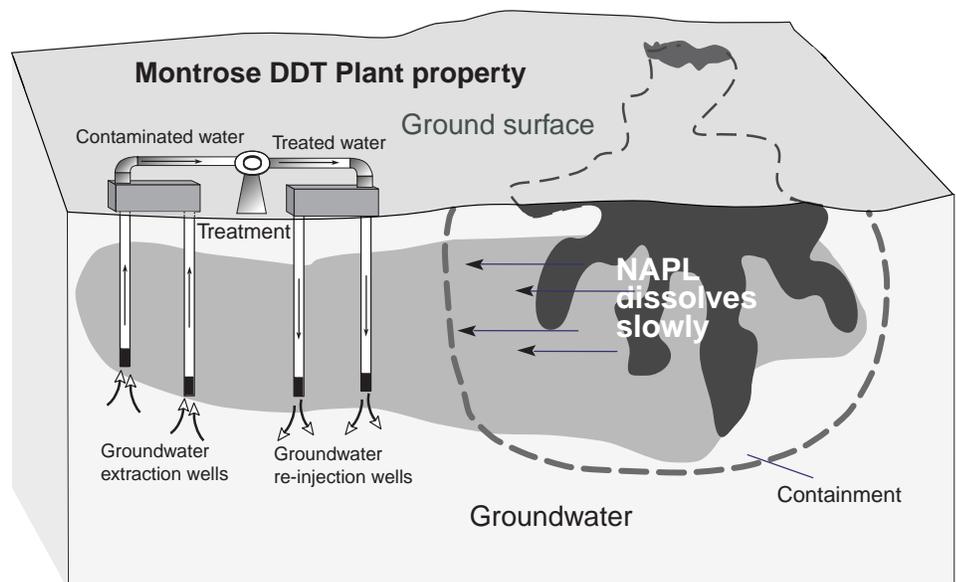
## What is "NAPL" and what is EPA doing with it?

Part of EPA's study and cleanup for Montrose is for *NAPL* under the ground at the former Montrose plant property. NAPL is a technical word which means "Non-Aqueous Phase Liquid." NAPL is a *form* of a chemical that dissolves only a little in water. For example, only a very small amount of oil will dissolve into water, while the rest stays separated.

Certain types of waste liquid chemicals behave like oil in the groundwater. These chemicals are NAPL when they are in their pure, highly-concentrated form. Underground,

the groundwater moves into the NAPL, which *very* slowly dissolves in the water. Most of the NAPL stays in place and can be extremely difficult to remove from the ground. Imagine running water on a sponge that is filled with oil-based paint. The water coming out of the sponge has paint in it, but the sponge stays filled with paint for a very long time. The ground is millions of times larger than this sponge, and the water in the ground moves much more slowly than the water from a faucet. So, NAPL can remain for hundreds of years in the ground, slowly dissolving in the groundwater (See Figure 3).

The chemical chlorobenzene under the Montrose plant property is a NAPL. No one is in contact with this chlorobenzene now. EPA is doing a feasibility study of options for removing some of this chlorobenzene from the ground, so that the cleanup of the groundwater can be made more effective. We will present



**Figure 3:** *Proposed cleanup and containment of NAPL at the Montrose Site*

the feasibility study to the public for comment, along with a proposal for the cleanup, to help us decide how to address the NAPL.

In order to finish the feasibility study, we need to take some more samples and perform some tests to determine which cleanup methods will work. This will include drilling and sampling monitoring wells, from which soil, water, and NAPL in the ground at Montrose can be sampled or extracted for study in the laboratory.

### What about groundwater?

The groundwater under the Montrose plant property is contaminated mostly with *chlorobenzene*, one of the raw materials for making

DDT. This contamination has moved deep into the ground and away from Montrose in the moving groundwater. The groundwater under the Del Amo site is contaminated mostly with *benzene*. These two contaminants have mixed together in the groundwater.

No one is drinking the contaminated groundwater now. Your drinking water comes from water companies who get their water from wells outside the contamination and from other sources. These water companies are required to meet stringent federal and state requirements for the water they serve to customers. The groundwater contamination is also so deep that it cannot move up through

into residential soils at the surface.

In June 1998, EPA issued a feasibility study and a proposal to the public on how EPA planned to address the contaminated groundwater, and prevent contaminated groundwater from reaching drinking water wells in the future. EPA responded to comments and selected a cleanup in March 1999 in a document called a *Record of Decision*.

Working with Montrose and the companies associated with the Del Amo Site, EPA is now starting to design the groundwater cleanup system so that it can be built. The cleanup system will pump contaminated water to the surface, treat it in a treatment system to remove the

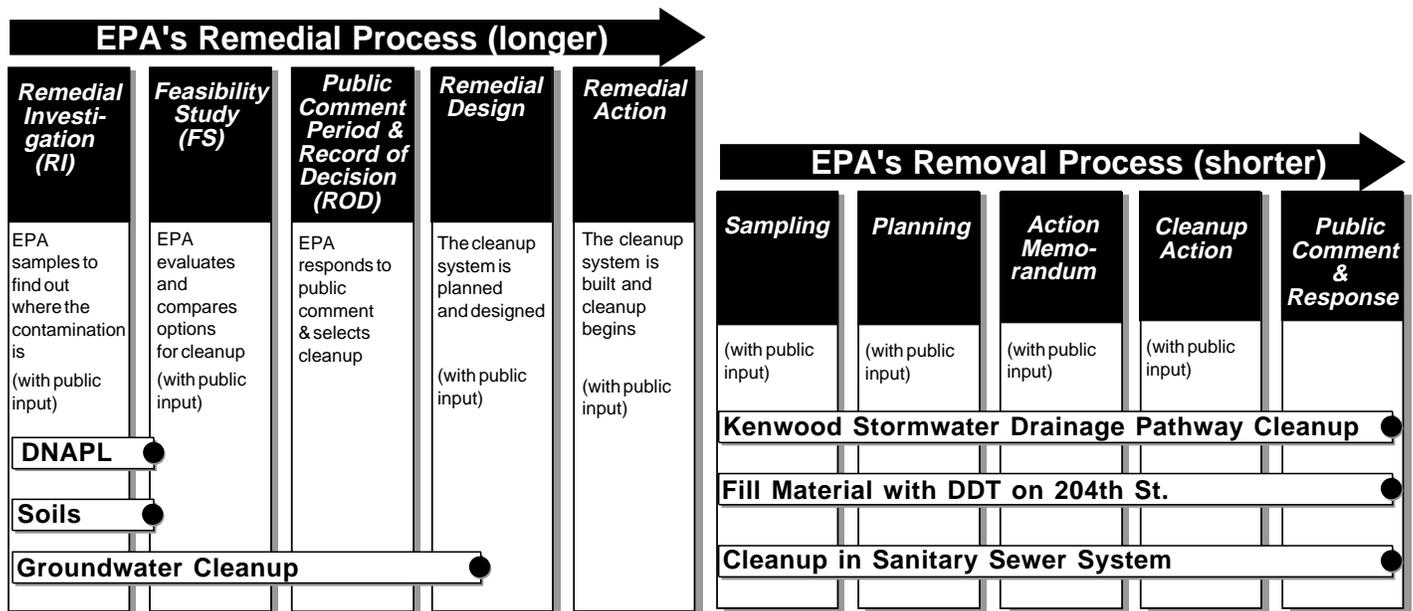


Figure 4: The Superfund Process at Montrose Superfund Site

contaminants, and then pump clean water back into the ground. In some areas, this will clean the groundwater to drinking water standards. Other groundwater areas cannot be cleaned up entirely. These areas of groundwater will be permanently contained so that the contamination can no longer spread (See Figure 3). Groundwater cleanup can be very slow; the cleanup will take many decades to complete. Over the next two years, EPA will be drilling more groundwater wells that will be sampled to provide important information to design the cleanup system. A groundwater computer model will be run to help us decide where to put the pumping wells. Once the design is complete, the cleanup system will be built and operated. We will provide you with more updates as this work progresses.

## **We Want Your Input**

EPA would like to continue to work with the community near the Montrose site to make sure we address your concerns and answer your questions. If you have questions or input on our activities, including how best to keep you involved, please call one of the contacts listed on the back page.

## Information Repositories

*Most of the studies, fact sheets, and other documents referenced above can be found at these information repositories.*

**Torrance Civic Center Library**  
3301 Torrance Blvd.  
Torrance, CA  
(310) 618-5959

**Carson Public Library**  
151 E. Carson St.  
Carson CA  
(310) 830-0901



### **EPA's Web page:**

Information about the site is also available on EPA's webpage at: **[www.epa.gov/region09/waste](http://www.epa.gov/region09/waste)**. Click on the Montrose site information button.

## For More Information

*If you have questions or concerns about the Montrose & Del Amo Superfund sites, or would like to be added to the mailing list, please contact:*

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