



EPA

FRONTIER FERTILIZER SUPERFUND SITE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY • REGION 9 • JULY 2000

New Location Proposed for Extraction Well in Mace Ranch Park

This fact sheet supersedes the U.S. Environmental Protection Agency's (EPA's) April 2000 fact sheet which announced the installation of a groundwater extraction well on Fifth Street behind 3813 Alegre Way. The well was to be installed in early June 2000. Because of the presence of burrowing owls (a protected species under federal and state law) and the desire to be closer to the leading edge of contaminated groundwater, EPA is proposing a new location for its first groundwater extraction well in the Mace Ranch Park subdivision. The proposed new location is Caricia Drive, between Alegre Way and Valerosa Way. Figure 1 illustrates the proposed location for this well and also shows the location of EPA's existing groundwater monitoring wells in the subdivision.

You are invited to a public meeting to discuss the proposed extraction well location as well as EPA's plans for expansion of the existing groundwater extraction and treatment system.

Background

Installation of this groundwater extraction well is part of ongoing work by EPA at the Frontier Fertilizer Superfund site located along Second Street south of Mace Ranch Park. Beginning in the 1970s, a fertilizer and pesticide distribution business operated on the western four acres of the site. This business sold bulk and pre-mixed fertilizers and pesticides to local farmers. Fertilizer and pesticide storage and application operations stopped at the site in March 1987. Prior to 1983, unused chemicals were routinely washed off machinery and disposed of on the ground or in one or more shallow, unlined ponds near the northwest corner of the facility. Soil in the vicinity of the former disposal basin and groundwater under the facility are contaminated as a result of past pesticide disposal activities. Contaminated groundwater has migrated north of the Frontier site and is beneath the Mace Ranch Park subdivision. Figure 1 shows the approximate boundary of the contaminated groundwater plume as of March 2000.

EPA installed an interim groundwater extraction and treatment system in 1995 using emergency response authority. Quarterly groundwater monitoring well data collected since December 1998 show that the system is no longer capturing all of the contaminated groundwater. Therefore, the system will be expanded in Summer 2001 so that the entire contaminated groundwater plume is captured and treated.

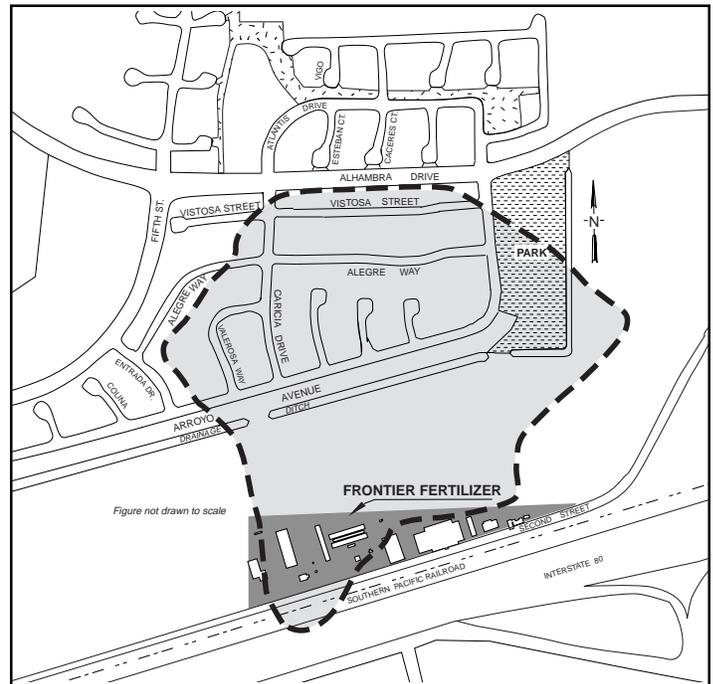


Figure 1: Approximate boundary of contaminated groundwater as of March 2000.



PUBLIC MEETING

Please Come!

7:00 to 9:00 p.m.

Wednesday, August 2, 2000
Public Works Training Room
City of Davis Corporation Yard
1717 Fifth Street, Davis, CA 95616

EPA invites you to attend a public meeting to discuss the proposed new location for the first groundwater extraction well.

The principal chemicals in groundwater are three pesticides: ethylene dibromide (EDB), 1,2-dichloropropane (DCP), and 1,2-dibromo-3-chloropropane (DBCP) and the solvent carbon tetrachloride. The solvents tetrachlorethene or perchloroethylene (PCE) and trichloroethene (TCE) have also recently been

tion from the site does not currently affect any of the City of Davis municipal water supply wells. Household water supplied by the City of Davis continues to meet all state and federal safe drinking water standards.

Sampling Results from Groundwater Monitoring Wells Installed in December 1999

In December 1999, EPA installed additional monitoring wells to determine how far contaminated groundwater had migrated. The new wells (see Figure 1) show no contamination from pesticides or carbon tetrachloride. However, TCE was detected in the well on Atlantis Drive and in the well at the eastern end of Alhambra Drive at levels above the safe drinking water standard. No chemicals were detected in any wells when EPA collected samples again in January and March 2000. EPA collects groundwater samples from all of the monitoring and extraction wells on a quarterly basis and will track the presence of TCE.

Expansion of Existing Groundwater Extraction and Treatment System

Now that the extent of contamination has been determined, additional extraction wells will be installed in order to prevent further migration of chemicals. The

extraction wells will be connected to the existing groundwater treatment system on the Frontier property. The first step in this process is to install one extraction well and perform tests (called pump tests) to determine how much water can be pumped from that well. This information will help EPA determine how closely extraction wells will need to be spaced and how much water will have to be pumped in order to prevent chemicals from moving past the extraction wells.

EPA anticipates that it may be necessary to install a total of six to eight additional groundwater extraction wells within the Mace Ranch subdivision. In order to connect the extraction wells to the treatment system on the Frontier property, EPA will be required to dig trenches in the street to lay pipeline. At this conceptual design stage, EPA anticipates that the extraction well pipelines will be connected to a larger pipeline along Caricia Drive. This larger pipeline will cross the field south of the subdivision and deliver contaminated groundwater to the treatment system on the Frontier property. Trenching associated with the proposed extraction well on Caricia Drive will not be performed until next spring when the remainder of the extraction wells are installed and the treatment system is upgraded to accommodate higher groundwater flow rates.

The extraction well on Caricia Drive will be installed over a four week period beginning in early September. Once the well is installed, the pump tests will be performed. The pump tests are

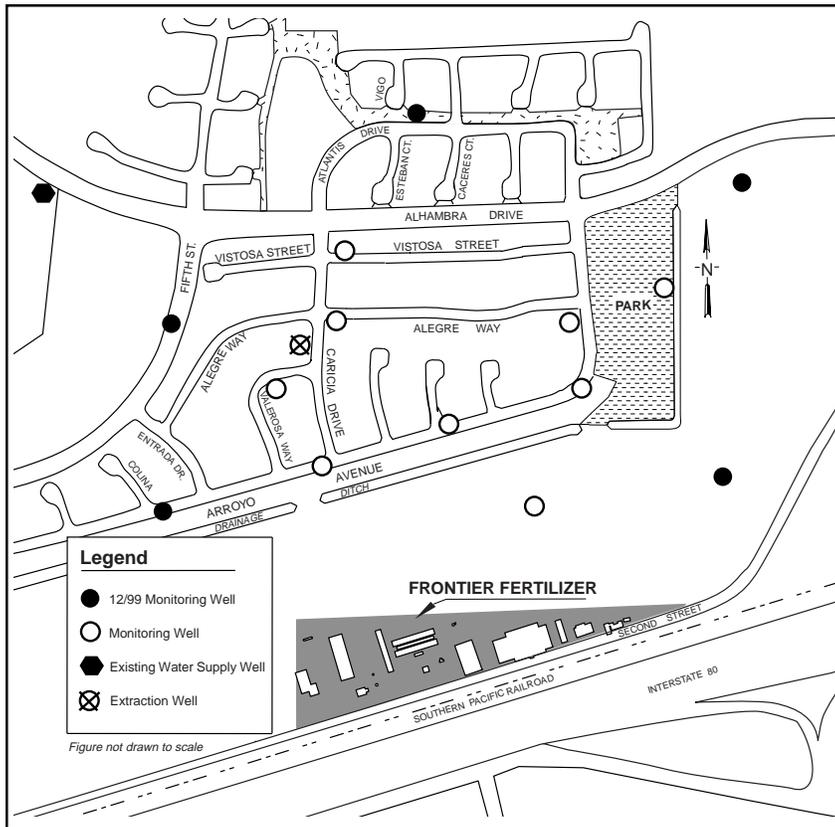


Figure 2: Locations of Groundwater Monitoring Wells and Extraction Well. Additional monitoring wells are located in the field to the south of the subdivision and on the Frontier Fertilizer property.

detected in groundwater monitoring wells in the subdivision. PCE and TCE have not been detected in EPA's monitoring wells in the agricultural field south of the subdivision. PCE has occasionally been detected in a few of the monitoring wells on the Frontier Fertilizer site as well as in EPA's two groundwater monitoring wells south of the Frontier property. PCE and TCE are extracted and treated along with the pesticides and carbon tetrachloride.

There are four water-bearing zones beneath Frontier Fertilizer and the Mace Ranch Park subdivision. These zones are separated by layers of clay which act as an impediment to groundwater movement between the zones. The shallow zone, called the S-1, extends from approximately 30 to 50 feet below ground surface (bgs). Below the S-1 zone is the S-2 zone. The S-2 zone extends from approximately 60 to 90 feet bgs. The A-1 aquifer extends from approximately 110 to 130 feet bgs. The drinking water supply for the City of Davis comes from the deeper A-2 aquifer which begins at approximately 180 feet bgs and is not contaminated.

The S-1, S-2 and A-1 zones are contaminated with chemicals from the Frontier Fertilizer site. Groundwater contamina-

expected to take four to six weeks. Once the data from the pump tests is evaluated, EPA will begin design of the expanded groundwater extraction and treatment system. EPA anticipates that proposed design of the remaining extraction wells and pipelines and proposed upgrades to the existing treatment system will be completed in Spring 2001. We will hold another public meeting at that time to discuss the proposed expansion as well as the construction schedule.

Extraction well drilling and pump testing will not pose a health risk to residents in the area. EPA will minimize disruptions to residents near the work, but a certain amount of traffic inconveniences and noise are inevitable. The well will be installed in the

public right-of way in a landscaped area. The well will be installed below ground and appear similar to a sewer manhole cover or a utility vault at the land surface. It will not interfere with vehicle or foot traffic.

Most of the personnel performing this work will be wearing protective clothing that is required by the Occupational Safety and Health Administration for this type of work. This is a standard precautionary measure for worker safety. In conformance with a City of Davis ordinance, EPA will limit working hours in residential areas to Monday through Friday, 7:00 AM to 6:00 PM.

What Happens When Groundwater Extraction Wells are Drilled?

- 1. DRILLING THE BOREHOLE FOR THE WELL.** A drilling rig will drill a 16-inch diameter vertical hole to a pre-determined depth (as much as 140 feet below ground surface).
- 2. CONSTRUCTION.** An 8-inch diameter steel pipe is placed in the 16-inch diameter borehole. Sections of the pipe are slotted to allow groundwater to flow into the pipe at locations that correspond to the S-1, S-2 and A-1 water-bearing zones. Sand is placed between the borehole and the slotted sections of the pipe to filter out rocks and clumps of clay that might otherwise flow into the well. A sanitary cement seal is then placed on top of the sand filter to the ground surface.
- 3. DEVELOPMENT.** Groundwater is pumped through the slotted sections to clean the clay, sand and gravel left in the well after it has been built.
- 4. WELLHEAD COMPLETION.** A locking cap will be placed over the top of the well, which will be below ground surface. A protective vault box, similar to a utility vault, will be constructed around the top of the wellhead.



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Community Involvement Coordinator

75 Hawthorne Street (SFD-3)

San Francisco, CA 94105-3901

You may also provide the above information via email to: herrera.angeles@epamail.epa.gov





If you have
Questions or Concerns
about EPA's cleanup efforts for the Frontier Fertilizer Site,
please contact:

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Messages may be left for Angeles Herrera by calling the Community Involvement Toll Free line: (800) 231-3075

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