



Frontier Fertilizer Superfund Site



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Cleanup Action Update Bulletin, Number 2

The United States Environmental Protection Agency (EPA) is currently finalizing the design of one of the most significant final cleanup actions – **electrical resistive heating (ERH)** - for Frontier Fertilizer Superfund (Site) in Davis, CA. The purpose of this update is to inform the community of the design and implementation schedule anticipated for the installation and start-up of the ERH system. The ERH system will be funded in part by **American Recovery and Reinvestment Act** stimulus funds. Below-ground components are scheduled for installation in September 2009.

Project Background

The Site contaminants include pesticides and carbon tetrachloride. Since 1995, EPA has operated a **groundwater extraction and treatment system** to remove Site contaminants from the extracted water. This process would continue until reaching cleanup goals.

Beginning next year, EPA intends to cleanup a significant source area of the pesticide-contaminated soil and **groundwater** by using in-situ electrical resistive heating (ERH). EPA anticipates that the ERH treatment system will greatly reduce the time required to cleanup the site. The Site contaminants to be treated are 1,2,3-Trichloropropane (TCP); 1,2-Dichloropropane (DCP); 1,2-Dibromo-3-chloropropane (DBCP); and Ethylene dibromide (EDB).

The ERH system will include below-ground heating components (**electrodes**) to heat the soil and groundwater, **extraction wells** to collect gas and liquid, and **temperature monitoring wells** to monitor the heating system operation. We expect that the system installation will begin September and will take approximately 2 months to complete.

Final Design

The final design includes detailed plans covering all elements of the heating system. EPA uses these plans to ensure that the heating cleanup is effective and is protective of nearby residents and site workers. These plans are currently under development and EPA will summarize them in a future Fact Sheet.

Installation and Activity Schedule

Installation of the sub-surface components starts in September 2009. Two drill rigs will operate from 8:00 am to 5:00 pm, Monday through Friday. Drilling may be required on Saturdays to finish the work prior to the start of rainy season.

The anticipated ERH schedule for installation, plan preparation, public outreach and heating operation includes:

- **ERH Final Design and Implementation Plans Complete:**
September 2009
- **Installation of Heating Electrodes, Extraction wells, and Monitoring wells:**
September-November 2009
- **Fact Sheet mailed with Heating Design Details:**
October 2009
- **Community Meeting:**
October 2009
- **ERH Heating Begins:**
January 2010
- **ERH Heating Complete:**
June 2011

For More Information

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Words in **bold defined on back page*

Glossary

American Recovery and Reinvestment Act of 2009 (Recovery Act): The Recovery Act, signed by President Obama on February 17, 2009, seeks in part to spur technological advances in science and health and to invest in environmental protection and other infrastructure that will provide long-term economic benefits.

Electrical resistive heating (ERH): Using electrodes, the soil and groundwater is heated up to the boiling point of water (100° Celsius) to reduce chemicals to a non-toxic state.

Electrodes: Steel bars installed in the ground are used to heat the soil and groundwater.

Extraction wells: Fiberglass pipe installed with electrodes to extract gas and liquid.

Groundwater: The supply of water found below ground surface, usually in aquifers.

Groundwater extraction and treatment system: This is a system that extracts and treats contaminated groundwater, in this case, with a granular activated carbon (GAC) unit. The GAC unit includes a series of carbon filters which adsorb chemical contaminants.

Monitoring Wells: Used to collect samples of groundwater or measure groundwater levels.

Temperature Monitoring Wells: Fiberglass piping with temperature sensors to monitor the heating system operation.

Information Repositories

The information repositories below house Site documents available for public review. EPA also has a web page for the Site that has more detailed Site-related documents at <http://www.epa.gov/region09/frontierfertilizer>

Yolo County Library, Davis Branch

315 East 14th Street
Davis, CA 95616
(530) 757-5593

Shields Library

Government Documents Department
University of California
Davis, CA 95616
(530) 752-6561

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