



# Fact Sheet

July 2016



## Cleanup and Restoration of the 2009 Jet Fuel Pipeline Leak

### BACKGROUND

This fact sheet updates the status of the February 2009 petroleum pipeline leak near the intersection of State Route 12 and Lawler Ranch Parkway in Suisun City. The leak was discovered along a portion of the pipeline that formerly transferred jet fuel from a Martinez, CA petroleum facility to Travis Air Force Base (AFB). This pipeline is no longer used, and a new pipeline has been installed to deliver jet fuel to Travis AFB. The type of jet fuel Travis AFB uses is Jet Propellant 8 or JP-8, which is kerosene-based and less flammable and less hazardous than earlier jet fuel formulas.

Since the leak occurred, Travis AFB has published fact sheets with more details about the leak, the initial response, the site investigation, additional monitoring conducted and the updated plan to clean up the JP-8. You can find these fact sheets as well as updated information on the progress of the cleanup efforts on the Travis AFB public environmental website at <http://www.travis.af.mil/About-Us/Environment>.

### CLEANUP ACTIVITIES SUMMARY

After Travis AFB stopped the leak and finished the initial responses to protect human health and the environment, the field team used a variety of cleanup technologies to remove the fuel hydrocarbons as efficiently and cost effectively as possible.

Since fuel floats on water, passive skimmers were placed in wells to collect the fuel. Each skimmer has

a membrane that only allows fuel to pass through it. After fuel collects at the bottom of the skimmer, the skimmer is brought back to the surface, and the fuel is poured into a collecting bucket. Although this is an effective technology, and the collected fuel could be sent to a recycling facility, it was too slow to meet base cleanup objectives.

The next technology, Dual Phase Extraction or DPE, uses groundwater extraction pumps to remove both fuel and contaminated water from the water table. Also, a vacuum system

was set up to increase the amount of water that could be extracted from the subsurface. This system successfully removed over 7,700 pounds of fuel constituents in less than a year.

The remaining fuel constituents are sticking to fine-grained clay particles and are more difficult to extract. So, the base switched to a biology-based technology that relied on microscopic organisms to break down the fuel. To promote the growth and activity of the microbes, chemicals that release oxygen were pumped into the fuel-contaminated soil. This technology is called In Site Chemical Oxidation or ISCO.

Over 4,000 gallons of ISCO solution were injected into the subsurface in November and December 2014. Over the next couple of months, groundwater sampling and laboratory analysis revealed that fuel concentrations in groundwater had dropped



A portable Soil Vapor Extraction System unit, such as the one shown here, uses steam to mobilize and remove fuel constituents from subsurface soil.

significantly. However, two groundwater areas with high fuel concentrations remained.

Since the biological approach seemed to work well, the field team switched to a new chemical formula that could generate more oxygen and promote the continued microbial breakdown of fuel constituents. Over 1,700 pounds of Oxygen Release Compound or ORC were injected in April 2015 with particular emphasis on those two groundwater areas.

### WHERE ARE WE NOW?

The critical component of a cleanup project is the verification that the field team achieved the cleanup levels for all contaminants. Two new monitoring wells were built and sampled, and laboratory analysis demonstrated that fuel had not moved near these wells. Beginning in May 2015, groundwater sampling was started to demonstrate the reduction and stability in residual hydrocarbon levels in groundwater over a twelve month period. The Air Force also collected soil samples in February 2016 to look for hydrocarbons in the soil. In one backyard (490 Armsby Way), residual jet fuel remained above the screening levels at five shallow soil locations.

The cleanup of fuel from clay-rich soil requires an aggressive technology, and the Air Force has worked with Solano County to approve the use of Soil Vapor Extraction or SVE at those five locations where the fuel constituents are still above screening levels. The SVE system that can speed up the fuel removal uses steam injected into the subsurface to heat the soil and mobilize the fuel constituents. This steam process will allow the SVE to collect the remaining fuel much more efficiently and complete this phase of the project in approximately 1 month.

Meanwhile the quarterly groundwater sampling continues, and the soil and groundwater data will be reevaluated to determine if any residual fuel remains or if the soil and groundwater technologies were able to achieve all cleanup standards.

The last steps of any cleanup project involve the publishing of a cleanup report that recommends no further action and closure of the environmental case. When the County approves the report, all wells and associated piping, as well as the remediation facility that had been built along Highway 12, will be properly decommissioned and removed from the site.

### SCHEDULING THE NEXT STEPS

Below is the current schedule for the next steps in this project.

Period	Activity
June 27, 2016	Final round of quarterly groundwater monitoring
July 7th and 8th, 2016	Remediation well installation, 490 Armsby Way
July 11th through 22nd, 2016	Steam injection and vapor extraction, 490 Armsby Way
August 2016	Post-treatment soil sampling, 490 Armsby Way
September - November 2013	Monthly groundwater sampling
December 2016	Site Closure, Well abandonment, and restoration of the backyard at 490 Armsby Way

### HOW CAN I LEARN MORE ABOUT THIS FUEL LEAK CLEANUP ACTION?

There are several ways to obtain updates on the status of this cleanup project. Both Ms. Merrie Schilter-Lowe (Travis AFB Public Affairs Office) and Mr. Josuwa Bernardo (SCDRM) can answer your questions or provide the latest information available.

1. Write to them at the addresses below.
2. Call them using the phone numbers below.
3. Send email to the addresses below.

**For additional information, please contact:**

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