A Tri-Valley CAREs Special Section *September 2010*

DANGEROUS WATERS:
Toxic & Radioactive Pollution at Livermore Lab

Action Now Can Safeguard Public Health and the Environment

The Livermore Lab main site was founded in 1952 to design new types of nuclear weapons. The Lab's Site 300 high explosives testing range was opened in the hills near Tracy in 1955 to aid in the bomb design effort. Decades of nuclear weapons activities have contaminated the air, soil, groundwater and some surface waters at both locations.

In the 1980s, the Livermore Lab main site was investigated by the federal Environmental Protection Agency (EPA) and, in 1987, it was placed on the agency's "Superfund" list of most contaminated sites in the country.

In the years that followed, the Lab's Site 300 was likewise investigated, given a high hazard ranking, and, in 1990, placed on the Superfund list.

The contaminants being addressed under the nation's Superfund law at one or both sites include a toxic and radioactive soup of solvents, PCBs, hazardous metals (e.g., mercury, hexavalent chromium), perchlorate, high explosives, and radioactive materials (e.g., tritium, uranium and plutonium).

Estimated cleanup costs top $300 million. Estimated cleanup times are multi-generational, involving 50 years or more.

Pollution Migrates into the Community

Among the contaminated areas being addressed under Superfund is a significant toxic groundwater plume that has migrated from the Livermore Lab main site into the community aquifer.

The off-site contaminant plume has moved from the Lab in a generally westward flow, and the plume and its "leading edge" (its outer boundary) are presently under homes, apartments, the arroyo, a city park and a community swimming pool near Charlotte Way and surrounding neighborhoods.

The major toxic contaminant at the plume's leading edge is a solvent, PCE (formally known as Tetrachloroethylene). Other portions of the off-site plume contain additional pollutants, including TCE (Trichloroethylene), another solvent routinely used for decades in the nuclear weapons programs at Livermore Lab.

These solvents affect the central nervous system, liver, kidney and the immune system, and are cancer-causing, among other negative health outcomes.

The Lab's contaminated groundwater prompted the State of California to issue a "Determination of Imminent or Substantial Endangerment" in 1984, compelling Livermore Lab to close wells at neighbors' homes along its western perimeter and provide the residents with bottled water. The Lab subsequently acquired many of those properties.

The toxic contaminants continued to move with the overall groundwater flow, following the original Arroyo Seco channel (as the path of least resistance) at a rate of about 70 feet per year through the neighborhoods further to the west of the Livermore Lab.

Over the past 25 years, partly due to the insistence of Tri-Valley CAREs and others, Livermore Lab has prioritized the construction of a series of groundwater treatment facilities on-site along its western perimeter.

The Lab also built a system of off-site extraction wells and underground pipelines out into the community to carry the contaminated groundwater back on-site, where it is treated

Continued on next page

in one of the specially built facilities to separate the pollutants from the water. Finally, the clean water is put back so that it recharges the groundwater aquifer, which is a precious resource used for both drinking water and agriculture in Livermore.

However, the Lab's off-site pumps and pipeline are insufficient to reach and clean up the leading edge of the contaminated groundwater plume. The Lab has just enough infrastructure out there to keep those pollutants in a "holding pattern" in the area around Big Trees Park and the community swimming pool, but not enough to actually clean it up.

And, the half-mile long stretch of community aquifer between the Lab's western perimeter and the contaminant plume's leading edge is still, today, polluted with solvents like TCE, although their concentrations have diminished significantly due to the pumping over the years.

The Upcoming Decision

Under the Superfund law, Livermore Lab is responsible for cleaning up the leading edge of the off-site plume. In 2007, Tri-Valley CAREs objected to the Lab's initial "plan" because it failed to actually clean up the toxic mess. Instead, Livermore Lab had instituted a "pilot project" to pump the PCE-contaminated groundwater and put it, untreated, into a city sewer line that runs along Charlotte Ave.

The sewer system is not a hazardous waste treatment facility and so the toxic solvent was neither being isolated nor cleaned up. Instead, ultimately, it was being sent into the San Francisco Bay.

After we met with the regulatory agencies and voiced our objections, they agreed with us that the sewer line was not a "treatment technology," and the Lab withdrew its plan to pump and dump a total of 80 million gallons of PCE-contaminated water.

Now, Livermore Lab has a new plan, which, in essence, is to build an additional pipeline out to the leading edge of the plume and pump the contaminated water into that pipeline, which would take the water back to an on-site treatment facility for cleaning.

The Lab's current draft plan is one of several options that Tri-Valley CAREs has analyzed, and we consider it generally acceptable. It will actually clean up the groundwater, and do so in an environmentally friendly manner.

There are still important issues that must be addressed in the Lab's cleanup plan. One of our remaining concerns involves the paucity of monitoring wells at the leading edge of the plume, making it difficult to know if the entire contaminated area is being cleaned up. Another of our concerns is the relative lack of funding that the Department of Energy is giving the Livermore Lab to do the cleanup. And, we will be watching closely to see if hexavalent chromium is also present in the groundwater at the leading edge of the plume, as one Lab report suggested it might be.

Tri-Valley CAREs' Role in the Cleanup

Achieving a full and comprehensive cleanup of the environmental impacts of nuclear weapons development was one of Tri-Valley CAREs' founding objectives in 1983, and it remains a priority today.

Tri-Valley CAREs won the first Technical Assistance Grant in the western United States from EPA in 1989. With that grant, we have contracted with an environmental scientist, Peter Strauss, and have offered testimony and technical comments on every aspect of the Superfund cleanup.

Also, since 1989, Tri-Valley CAREs has participated in the Livermore Lab Main Site Community Work Group to advise the Lab and the regulatory agencies on the Superfund cleanup. Tri-Valley CAREs was the first non-governmental organization to win a national recognition award from EPA for the effectiveness of its work in 2000.

Further, Tri-Valley CAREs maintains an ongoing commitment to involve the directly affected community in Superfund decision-making, and so the group hosts community meetings and produces reader-friendly materials to help encourage and empower public participation.

We will host a community meeting on **September 30** on the Superfund cleanup of Livermore Lab, with a focus on the off-site contaminated plume and the upcoming decision. The Lab's public meeting to present its plan and receive public comment will be held on **October 7**. *(See inside and below for details.)*

Further, we ask our readers to please **sign and circulate the petition** *(inside)* to help us improve the entire Livermore Lab main site and Site 300 Superfund cleanup, of which this off-site plume is only one small part.

YOUR VOICE MATTERS

◆ Community meeting, hosted by Tri-Valley CAREs. Thursday, 9/30/10 at 7 PM, 749 Hazel St., Livermore. RSVP to Tri-Valley CAREs, (925) 443-7148.

◆ Livermore Lab public meeting. Thursday, 10/7/10 at 6:30 PM, Arroyo Seco School, 5280 Irene Way, Livermore. U.S. Dept. of Energy, (925) 422-2567.

◆ Sign and send us the enclosed petition to compel adequate funding to clean up the mess at Livermore Lab. We will use the petitions to advocate for cleanup in meetings with the Dept. of Energy and Congress.

PETITION

to Compel Adequate Funding to Clean Up Toxic and Radioactive Contamination at Livermore Lab

WHEREAS, The Dept. of Energy (DOE) National Nuclear Security Administration owns the Livermore Lab main site in Livermore and its Site 300 high explosives testing range near Tracy, CA.

WHEREAS, the Livermore Lab main site was placed on the EPA's Superfund list of most contaminated sites in the nation in 1987, and the Lab's Site 300 was placed on that list in 1990.

WHEREAS, both Livermore Lab locations are contaminated with radioactive and toxic materials that have oozed through soils, groundwater aquifers and some surface waters.

WHEREAS, the contaminants that have leaked into the environment at one or both sites include radioactive hydrogen, uranium, plutonium, solvents, high explosive compounds, mercury, hexavalent chromium, and others.

WHEREAS, if the Livermore Lab main site pollution is not remediated, the EPA has estimated that the cancer risk associated with drinking the water is one cancer per every thousand residents, and the EPA has estimated the cancer risk of drinking the water at one of the contaminated areas at Site 300 is one in one hundred.

WHEREAS, the DOE budget for Livermore Lab exceeds $1.2 billion annually, with nuclear weapons activities taking up more than 85% of the budget and cleanup efforts receiving 2%.

WHEREAS, the DOE received an additional $6 billion (above annual appropriations) in federal "stimulus" funding to accelerate toxic and radioactive waste cleanup at its sites.

WHEREAS, the DOE has allocated zero "stimulus" funds to the cleanup of the Livermore Lab main site or Site 300, although Bay Area members of Congress and the community have sent letters requesting funds.

WHEREAS, stimulus funds and additional appropriations are urgently needed to address contamination at the Livermore Lab main site, including recently discovered mixed radioactive wastes and mercury in soils, decontamination of an old nuclear reactor building, an off-site toxic groundwater plume, and other long-standing hazards.

WHEREAS, stimulus funds and additional appropriations are also urgently needed to address contamination at Site 300, including cleanup at "firing tables" where nuclear bomb experiments are, to this day, detonated in the open air and polluted groundwater is migrating toward the fence line.

THEREFORE, WE CALL ON THE ADMINISTRATION AND CONGRESS TO ADEQUATELY FUND CLEANUP AT LIVERMORE LAB. WE FURTHER CALL FOR CESSATION OF ACTIVITIES THAT CONTINUE TO POLLUTE.

Name (print or write clearly)	*Address/City/State/Zip Code*	*Phone*	*✔ for updates*
1.			
2.			
3.			
4.			

Send to/Order more: Tri-Valley CAREs, 2582 Old First St, Livermore, CA 94550 • trivalleycares.org

COMMUNITY MEETING

"Toxics, Radiation, Superfund & the Livermore Lab"

Thursday, September 30

Photo of leaking toxic waste drums at Livermore Lab

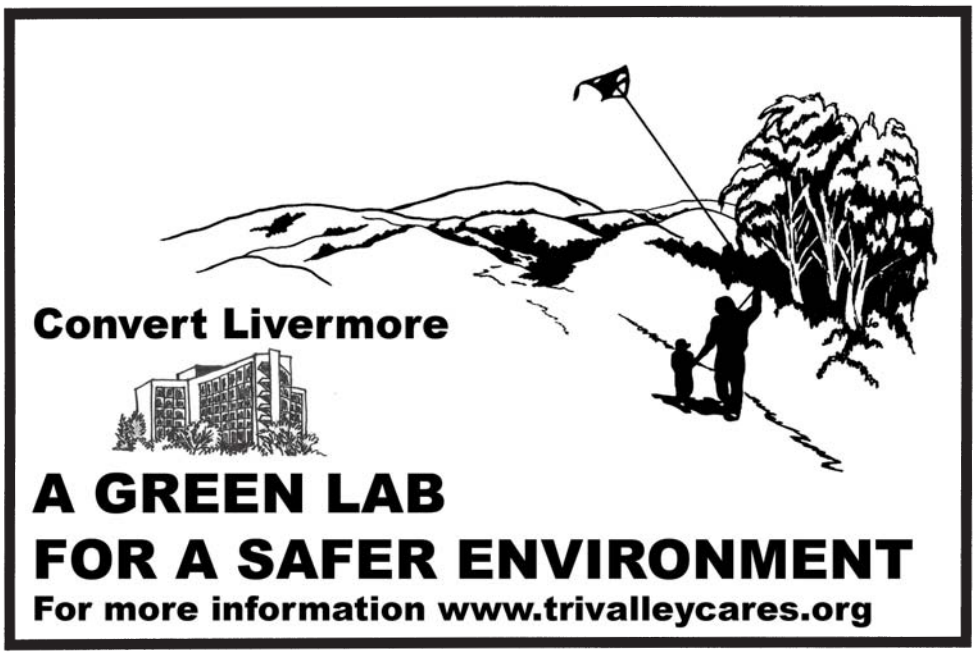
7 PM – 8:30 PM, 749 Hazel St., Livermore, (925) 443-7148

This community meeting will take place at Janis Kate's home, near the off-site toxic waste plume emanating from Livermore Lab.

The keynote speaker will be environmental scientist Peter Strauss, who serves as Tri-Valley CAREs' advisor on the Superfund cleanup.

Come and learn about the contaminants, the off-site plume, the proposed cleanup options, the Superfund law, and what you can do to help win justice for the people of Livermore and our environment.

At the end of the meeting, we will offer a short "field trip" to the nearby Big Trees Park. There, you can see one of Livermore Lab's contaminant pumping wells, several of the Lab's monitoring wells and two proposed pipeline routes for contaminated groundwater.



RSVP to Tri-Valley CAREs at (925) 443-7148.

In addition to hosting community events like this one, we meet on the 3rd Thursday of the month, 7:30 PM at the Livermore main Library. Interested members of the public are invited.