The Lawrence Livermore National Laboratory (LLNL) was founded in 1952 to develop new types of nuclear weapons. It consists of two geographic locations.

The "**Main Site"** is about one square mile; located on the eastern edge of Livermore. Homes, apartments and more are built up to the fence line. There are about 50,000 people living within 2 miles of the Main Site, and 7 million within a 50-mile radius.

"Site 300" is LLNL's high explosives testing range near Tracy. Both the Main Site and Site 300 sites have soil and groundwater that are contaminated with toxic and radioactive materials. Cleanup of both is projected to last until the end of the 21st century.

The Main Site

LLNL conducts experiments with **radioactive substances**, including plutonium, uranium, and tritium (radioactive hydrogen). Since the 1960's, LLNL has released approximately one million curies of radiation into the environment (data from 1952 to 1960 is not available). Also, laboratory processes used and released a variety of **hazardous chemicals**. These include heavy metals, PCBs and volatile organic compounds (VOCs). LLNL has had accidental releases of these substances into the air, soils and the nearby arroyo, as well as extensive groundwater pollution.

In 1987, the Main Site was placed on the EPA "Superfund" list, a list of the most contaminated sites in the nation. In 1992 a Record of Decision (ROD) was signed and full cleanup began in 1995. It had a priority to capture the off-site plume under homes, streets, a park and community swimming pool. At the same time, a plan was developed to treat the most heavily contaminated source areas on-site. Originally, estimated cleanup time was 53-years: in 2011, LLNL estimated cleanup would not be completed until the year 2080 with a remaining cost of one billion dollars.

1. **Sufficient Funding from Congress is Essential.** A basic concern is whether funding commitments are sufficient to ensure long-term cleanup and achievement of project milestones. Cutbacks in funds only delay inevitable expenditures, and may make cleanup more costly. Long-term funding for clean up should be a major commitment, and Congress should increase funding for LLNL's Superfund cleanup.

2. **The Dept. of Energy must Request Enough Funding**. The DOE budget for Livermore Lab exceeds $1 Billion annually, with nuclear weapons activities routinely taking about 85% of the money and the Superfund cleanup of toxic and radioactive materials at the Main Site and Site 300 together receiving a mere 2% to 3% annually.

3. **Cleanup should be Comprehensive & Complete.** Wherever possible, Tri-Valley CAREs (TVC) recommends that LLNL be cleaned up to a level that allows unrestricted use and avoids the need for long-term stewardship (too often this means just babysitting contamination in perpetuity).

4. **Cleanup should meet the Highest Standards.** TVC is concerned that there will be a relaxation of standards - that the active cleanup will shift to passive remediation or that LLNL will receive waivers from meeting cleanup standards.

Site 300

Site 300 is Livermore Lab's high explosives testing facility. It is located east of Livermore near Tracy. It encompasses 11 square miles along Corral Hollow Road. Site 300 operations have included open-air blasts with high explosives and multiple **toxic and radioactive materials**. Site 300 activities have polluted soil, surface water, springs and groundwater with a mixture of chemical and radioactive wastes including solvents, dioxins, furans, PCBs, perchlorate, high explosive compounds, metals, and

radionuclides (tritium and uranium). **In 1990, Site 300 was put on the EPA "Superfund" list**. In addition to the points listed above, there are additional considerations at Site 300, including:

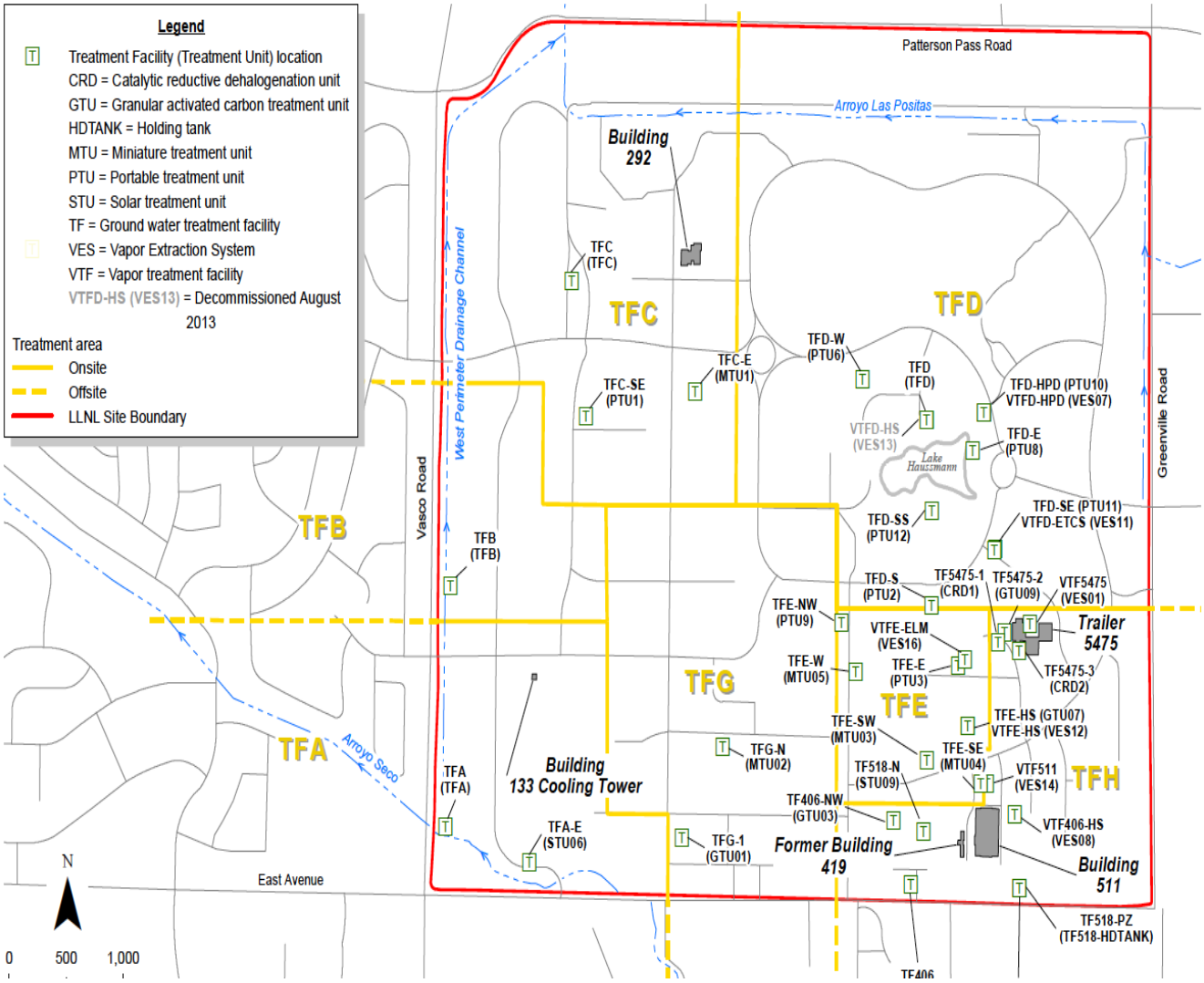
1. Remediation of open air firing tables (Building 812). The Superfund cleanup at Site 300 is entering a new and important phase that will extend through 2015. Cleanup is starting at one of the last open-air firing tables that had been used often to detonate nuclear weapons experiments with Uranium-238. The firing table is located almost directly over an earthquake fault.

2. The Pit 7 Complex. The "Pit 7 Complex" of unlined dumpsites has leaked uranium, tritium and other contaminants into the groundwater at high concentrations. A remedy has been selected, but the remedy allows the most contaminants to be left in place. Continued vigilance is needed to ensure that pollutants do not leach again into the groundwater and/or migrate further.

3. Remediating Perchlorate in Numerous Areas. Perchlorate is used in explosives and is found in several locations. LLNL is doing tests to determine how to clean up this contaminant.

Note: LLNL Main Site cleanup map is below and the Site 300 map follows

2013 Annual Report *UCRL-AR-126020-13*



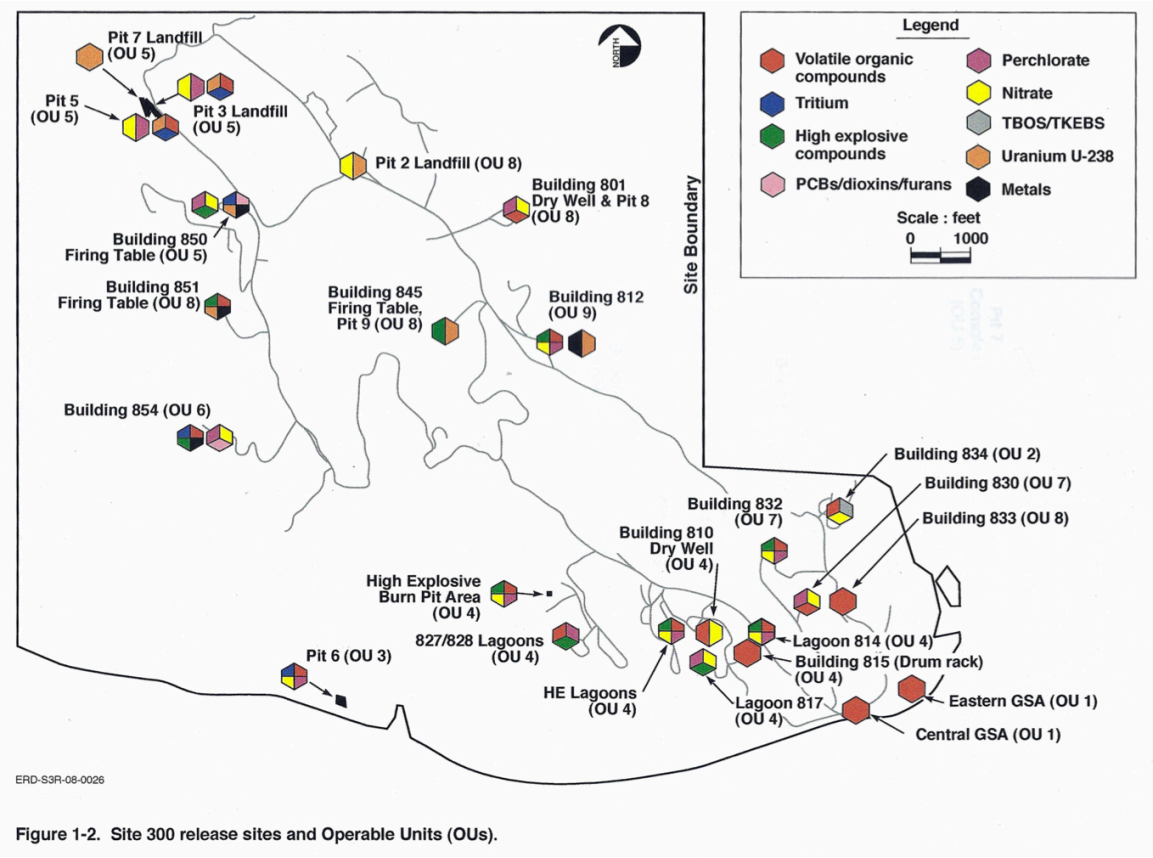


Figure 1-2. Site 300 release sites and Operable Units (OUs).

Release sites and contaminants of concern at Site 300 for surface soil, subsurface soil/rock, surface water, and ground water. UCAR 2009