

Dry Cleaning Facility Site Restoration for Redevelopment

CALIBRE

Our Success Follows Yours

6354 Walker Lane, Suite 500
Alexandria, Virginia 22310-3252

w. www.calibresys.com
e. info@calibresys.com
p. 703.797.8500 or 1.888.CALIBRE



About CALIBRE

Founded in 1989, CALIBRE Systems Inc. is an employee-owned management consulting and technology services company supporting government and industry. CALIBRE is committed to the success of our clients, and delivers enduring solutions that solve management, technology, and program challenges.

Solutions That Make a Difference

We work in multidisciplinary teams, partnering with you to deliver practical, timely, best value solutions that solve your management, technology, and program challenges and help you achieve your business objectives. This collaborative work style helps produce the results you seek – today and where you want to be tomorrow.

Project Background

>> CALIBRE's Client, Modesto Steam Laundry and Cleaners, had a historical spill of perchloroethylene (PCE) which necessitated remediation of soil and groundwater. Under a fixed-price performance-based contract, CALIBRE successfully characterized and remediated contaminated soil and groundwater, including a PCE contaminant plume that had impacted a nearby municipal water supply well.

Benefits to the Client

>> In two years, our remedy reduced PCE concentrations in groundwater from 2,000 ug/L to non-detect levels in every on-site well (source-area reductions of greater than 99.99%) and PCE concentrations at the municipal supply well were reduced below applicable criteria. We achieved savings for our client at this Site using a streamlined approach that initiated remediation as part of the required characterization, and by focusing on obtaining key data needed to assist in making the critical decisions regarding site restoration. Additionally, through the successful site treatment and litigation support provided, CALIBRE has significantly reduced the estimated cleanup liability resulting in \$28 million in savings for the client. In two years, the remedy reduced PCE in groundwater from 2,000 ug/L to non-detect levels in every on-site well (source-area reductions of greater than 99.99%); concentrations at the municipal supply well were reduced below applicable criteria.

PROJECT SUMMARY

CALIBRE completed highly successful environmental restoration work at the Modesto Steam Laundry and Cleaners (MSLC) site in Modesto, California. Early investigations throughout the City of Modesto indicated that MSLC was one of several dry cleaning facilities that contaminated the local aquifer with

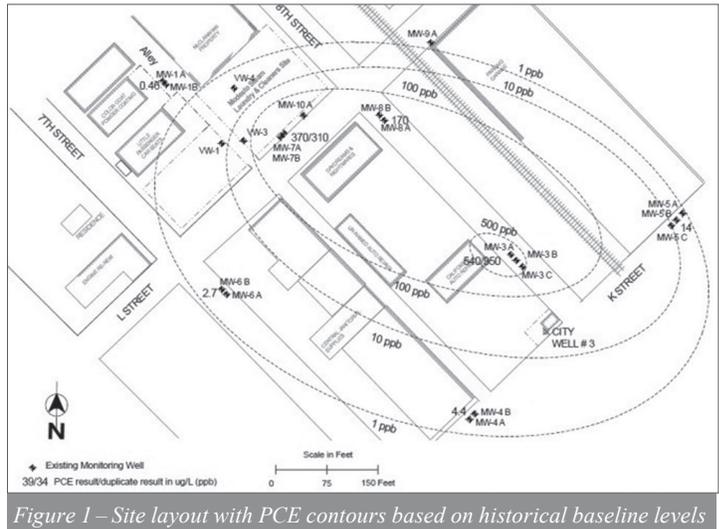


Figure 1 – Site layout with PCE contours based on historical baseline levels

perchloroethylene (PCE). The facility used PCE in dry-cleaning operations between 1965 and 1996. The local redevelopment authority filed suit against MSLC and other dry cleaners in 1998. Prior characterization work performed in 2003 estimated 350 pounds of PCE in the soil and potential separate phase PCE in the saturated zone. In April 2004, MSLC met with the Central Valley Regional Water Quality Control Board (RWQCB) and agreed to conduct a series of investigations aimed at selecting a remedy for the site. CALIBRE was hired after proposing a streamlined approach that initiated remediation as a part of the required investigation.

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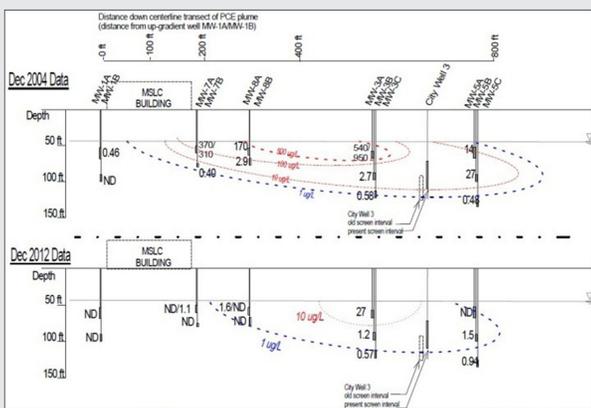


Figure 2 – Cross section comparison of baseline (2004) and recent (2012) contamination levels.

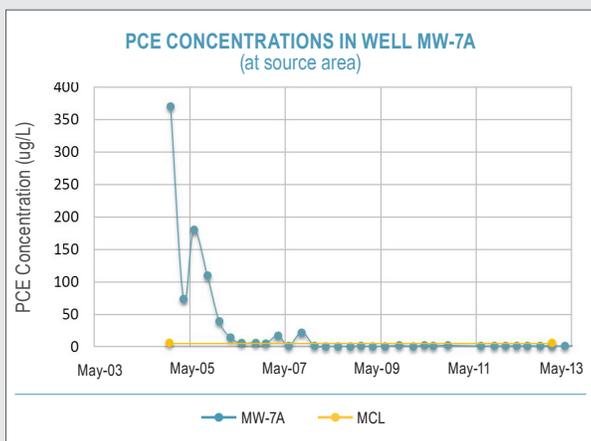


Figure 3 – Concentration trends at a source-area monitoring well.

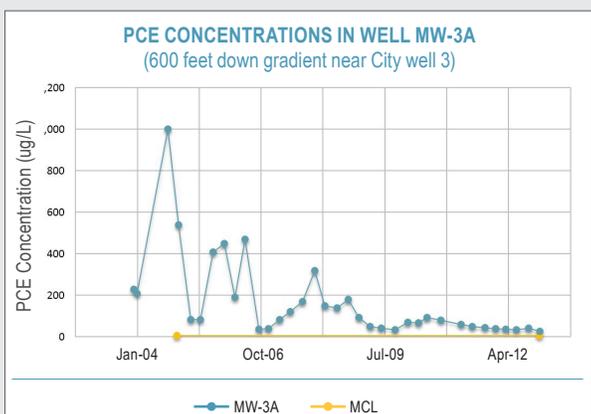


Figure 4 – Concentration trends at a down gradient monitoring well.

Using Data Quality Objectives (DQO), CALIBRE quickly focused on the key data needed to assist in making critical decisions regarding site restoration. By the fall of 2004, CALIBRE:

- Determined there was no separate phase product at the site and that the original estimate of 350 pounds of PCE in the soil was actually closer to 35 pounds (an order-of-magnitude lower);
- Implemented a soil vapor extraction (SVE) system to remove the residual PCE solvent in the vadose zone; and
- Completed characterization of the site and put MSLC in compliance with the Order requiring quarterly monitoring of the ground water (see Figure 1).

Through successful site treatment and litigation support, CALIBRE significantly reduced the original site liability which has led to \$28 million in savings for the client.

Periodic use of the nearest municipal supply well drew the distal portions of the plume into the capture zone of that water supply and it was shut down in late 2006. CALIBRE developed a plan to restart that well and treat the water with activated carbon as the final element of the overall remedy. All recent sampling data indicate PCE at levels below the MCL for PCE (under 1 ppb PCE in the supply well).

CALIBRE has provided support for the ongoing litigation with the City since work started. In a 2006 trial, MSLC was granted a defense verdict on the strength of the cleanup work performed to date. While the local redevelopment district contended it would cost \$30 million to restore the site, CALIBRE removed the source area, completed all groundwater restoration in the onsite property for less than \$1 million, and offered to complete the work with well-head treatment for less than \$1 million more, a \$28 million savings.

Work completed on the project by CALIBRE has included: 1) project scoping/planning based on data quality objectives (DQOs) to identify data gaps and prepare investigation work plans and pilot testing plans; 2) site characterization studies leading to an implementation of accelerated pilot tests and remedial action plan; 3) implementation of vadose zone treatment with SVE technology and groundwater treatment through biological treatment; 4) site wide monitoring and reporting; and 5) litigation support. Litigation support on the project was associated with cost estimates for site restoration and property acquisition by the local re-development district.