



Removing a toxic legacy from MGP sites

For years, [manufactured gas plants](#) (MGPs) stood as monuments to technology. Dozens of them operated in California in the mid -1800s and early 1900s, using coal and oil to produce energy for heating, lighting and cooking.

The technology was considered revolutionary – until natural gas and electricity came along.

By World War II, the plants were mostly obsolete. Some were dismantled and built over. Many of the sites are small – often less than an acre. They are frequently near downtowns or other highly populated areas. Their environmental legacies – polycyclic aromatic hydrocarbons (PAHs), lead, arsenic, petroleum hydrocarbons and other contaminants – remained in soil and groundwater.

In the 1980s, the state [Department of Toxic Substances Control](#) (DTSC) struck agreements with utility companies to investigate and clean up these former MGP sites. In some cases, the utilities had sold the properties to third parties for development purposes.

“Although the contaminants of concern typically associated with former MGP sites are not highly mobile, they are hazardous and some are carcinogenic,” said DTSC Senior Scientist Tedd Yargeau. “Given their proximity to populations, we are eliminating exposure routes and the potential (for contaminants) to get into groundwater.”

The majority of the sites in Southern California have been remediated and returned to productive use,

Left: Historical photo of the Sacramento MGP site

Below Left: Situ Thermal Desorption at the Alhambra MGP site

Below Right: Excavation from the Riverside MGP site





MGP sites

while many former and current Pacific Gas and Electric Co. properties in Central and Northern California are in the investigative stages, Yargeau said.

Thirty-nine of 70 former sites under DTSC's oversight have been cleaned up, for a total of about 55 acres returned to productive use. About 160 acres remain to be remediated, and most of those should be completed in three to five years, Yargeau said.

Most of the cleanup projects are not complicated, but they take time – usually at least four years to complete. The process can be particularly challenging if a utility company no longer owns the site:

“Lengthy third-party negotiations need to take place, adding considerable time and effort to the investigation and eventual cleanups, Yargeau said.

In 2010, to facilitate investigation and cleanup at two former gas plant sites, PG&E repurchased properties that had been developed with apartments and a motel.

The Napa apartment complex was razed years after it was built, tenants were relocated and the final cleanup certification is expected in 2017. In Red Bluff, the utility bought and demolished a motel that had operated for almost a half-century. The site is vacant, fenced off and undergoing remediation.

The cleanup methods vary, with soil excavation and disposal most common; Thousands of tons of contaminated soil have been safely removed from these sites all over California over the past two decades.

More innovative measures have been used when buildings need to be preserved, groundwater needs to be treated or other conditions are present.

These other measures include drilling holes and mixing in cement to prevent leaching in a process called solidification; adding ozone, a strong oxidizer; and vaporizing contaminants in a heating process called “in-situ thermal desorption.”