

RISK BULLETIN

Underground storage tank closures: Low threat doesn't necessarily mean "no threat"

Environmental risks and liabilities from risk based corrective action programs and the low-threat underground storage tank case closure policy (LTCP)

Underground storage tank (UST) systems (tanks & piping) represent a significant threat to the environment if they are not properly operated, monitored, and replaced/closed upon reaching their expected useful life. Although leak detection systems have become more reliable, a significant percentage of releases are not discovered until closure/removal of the tank system. It is not uncommon to find environmental contamination at sites with USTs systems reported to be "in compliance" with leak detection regulations – only to later discover there was a mysterious release source.

The potential for remediation expense, bodily injury, and property damage claims from soil, soil gas, and groundwater contamination at leaking underground storage tanks (LUST) sites is also significant. Since USEPA began collecting data in 1988, over 538,000 confirmed UST releases have been reported. Clean-up costs range from \$10,000 for sites with small amounts of contaminated soil to >\$130,000 for sites with more extensive soil contamination. These costs can rapidly escalate for sites with groundwater contamination, which typically range from \$100,000 to over \$1 million.

UST cleanup funds vary from state to state with regards to funding limits and what qualifies for reimbursement. A larger issue stems from the fact that some state funded cleanups of UST sites can take over 20 to 30 years before a formal "Closure" or "No Further Action" (NFA) determination is issued by a regulatory agency. For example, the most recent estimate for California's UST program reported 6,100 open cleanup cases with most cases over 15 years old. The California State Water Resources Control Board (SWRCB) estimates that 900 cases/year are closed. However, over 50% of the open cases are still listed with a "Site Assessment Status" indicating that remediation has not been initiated at the site.

This article discusses the risks and liabilities associated with risk based closure processes for LUST sites and profiles California's program to help illustrate these issues. In California, in order to expedite UST closures and reduce eroding tank funds, the SWRCB adopted the Low-Threat Underground Storage Tank Case Closure Policy (LTCP) in 2012. According to California UST fund claims status reports, shortly after implementation of this policy, the number of total closed claims finally exceeded the number of total unreimbursed claims for the first time since the UST fund was established (circa 1995). This trend has continued even while the total number of eligible claims has continued to increase. While this and other risk based UST remediation programs provide real advantages and may help speed closure, site owners, prospective purchasers, developers, and other potentially responsible parties must remain aware of the limitations and risks.



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Risk based corrective action

As early as the 1990s, USEPA provided decision making guidance on UST release sites based on the risks they pose to human health and the environment. Their Risk Based Decision Making (RBDM) Policy explained the value of such a process and helped push the use of risk based corrective action at UST sites. This site-specific concept was consistent with closures under the USEPA Superfund Program and at other non-LUST sites. It is generally referred to as the Risk Based Corrective Action (RBCA) process.

Because states are the primary implementers of UST programs, over the years USEPA's regional offices have worked with state and local UST program regulators to encourage the use of RBCA to speed up corrective action and UST closures. Initially, USEPA worked with ASTM to provide guidance and training for environmental professionals on RBCA including contaminant fate and transport modeling. Currently, USEPA utilizes the Contaminated Site Clean-up Information (Clu-In) website to provide information and training on innovative treatment and site characterization technologies for remediation stakeholders, including those managing LUST sites. In addition to these resources, the Interstate Technology & Regulatory Council (ITRC), a consortium of federal, state, and local regulatory agencies, industry representatives, and consulting firms, also provides guidance and training on petroleum site risk assessment and risk based closure.

Closing LUST sites under a low threat program, or achieving RBCA "closure" of any site with residual contamination in soil or groundwater, can result in future environmental issues and liabilities. In the past several years, there has been an increased demand to redevelop closed LUST sites into either commercial or multi-family residential uses based on their highly desirable urban locations. However, future reuse of LUST sites may not be allowed for unlimited or unrestricted uses such as residential. Some state cleanup programs like the LTCP in California approve closures under the existing/current site use (e.g., as a retail gasoline station) and do not take into account future proposed uses. This can become an impediment to the seller, buyer, and/or developer of the site.

Furthermore, although a LUST site may have received previous closure under a regulatory program, there can still be a myriad of redevelopment obstacles related to residual contamination, deed restrictions, rezoning, and other construction limitations. Future development of LUST properties closed using RBCA approaches may incur unexpected costs from dealing with residual contamination that was left in place. These sites may also pose a third party bodily injury risk for construction and utility workers

// Funding is not available for investigation or remediation of vapor intrusion conditions from contaminated soil and groundwater. //

that can be exposed to unknown residual contaminants in the subsurface while working on site, in right of ways, or in the vicinity of the site.

In California, under the LTCP guidelines, a future property owner/developer cannot recover any monies from the tank fund to further evaluate or manage residual contamination subsequently discovered on site. This includes funding for contaminated soil or groundwater treatment/disposal should it be encountered during redevelopment.

Similarly, funding is not available for investigation or remediation of vapor intrusion conditions from contaminated soil and groundwater. Today, it is not uncommon for questions to arise about potential vapor intrusion and building occupant exposure at older LUST sites that were closed without adequate evaluation of this pathway.

Another factor a buyer/seller must consider is that groundwater and/or vapor contamination plumes may have migrated off-site since closure was granted. Also, it is often assumed that natural biodegradation of chemical constituents (on- and off-site) will reduce contaminant concentrations, but risks can remain if these natural biochemical processes are ineffective.

All of the above situations can cause third party property damage and bodily injury claims. These have the potential to result in additional site investigation, remediation and legal defense expense. In addition to these complexities, all of these technical concerns may be raised by lenders and other stakeholders resulting in inadequate capital or delays in redevelopment projects.

LTCP closure criteria

A review of the LTCP eligibility and closure criteria can help provide a better understanding of the environmental complexities associated with sites that have undergone risk based closure. Although human contact with pollutants can occur through ingestion, dermal contact, or inhalation, the most common drivers of health risks are ingestion of groundwater from drinking water wells, inhalation of vapors in buildings, and contact with near surface soils. LTCP candidate sites must address exposures from all three of these media-specific criteria.

The LTCP groundwater criteria includes, but is not limited to, varying permissible lengths of contaminant plumes (250 to 1,000 ft), as well as specific concentration ranges of certain contaminants (i.e., BTEX, TPH, and MTBE). In general, the concentrations of these contaminants that are allowed to remain in place can be several orders of magnitude above their respective drinking water maximum contaminant levels (MCLs). In some instances, free product can be present in groundwater, but if it does not extend off site, the site owner can accept/utilize a deed restriction. For soil vapor, the criteria include vertical separation of a clean zone between the impacted area and groundwater. Soil contact risk is typically addressed through surficial soil excavation, capping, soil management plans and/or deed restrictions.

This LTCP contrasts with more prescriptive state programs, like that in Massachusetts, where specific UST closure criteria must be met. This includes specific soil and groundwater sampling protocols. If analytical results are found to exceed reportable concentrations (e.g., MCLs), remedial action is required until specific standards are met. The cleanup must also be performed under the oversight of a Licensed Site Professional (LSP), who is also responsible for submission of documentation to the regulatory agency.

Site closure criteria not an exact science

The LTCP relies on the belief that remaining petroleum components will naturally degrade or attenuate before they leach from soils or reach underground aquifers, and thereby pose a threat to human health and the environment. These assumptions have been questioned by many regulators and environmental scientists, who caution that natural degradation depends on the local geology and biochemical processes. Before passage of the LTCP in 2012, state cleanup rules authorized regulators to require a complete cleanup of all waste discharged and restoration of the affected water body to background conditions. With the new criteria, cases can be closed with measurable contamination levels and the recognition that “natural attenuation is doing the job.”

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There have been instances where closure was issued under the LTCP even after opposition by a city health department and/or water district. For example, LUST contamination at a former gas station in San Jose, CA, which was located across the street from a city park containing orchards and community gardens, was recommended for closure. A well approximately 290 feet away was planned for use by the city as irrigation for the park. State regulators indicated that the case had enough data to justify the assumption that gasoline contaminants left underground would degrade over time and not pose a threat. The Santa Clara County Department of Environmental Health and Santa Clara Valley Water District wanted further investigation to fully characterize where the contaminants had spread. The Water District asserted that the State didn't refer to the latest available data when closing the case. That data showed higher concentrations of tert-Butyl Alcohol (TBA – a fuel oxygenate) at a well close to the original leak, which suggested the plume could be migrating. The State did not respond to any comments and proceeded with closure of the site.

Another example of potential closure of a site where a potential threat existed to human health was at a former car wash

located in Huntington Beach, CA. A private owner acquired a day care center adjacent to the car wash, which was known to be undergoing investigation due to an UST leak. However, this adjacent property owner was not concerned because the Orange County Health Care Agency (OCHA) assured him that it was being cleaned up. Ten years after the purchase, the site was still being remediated and proposed sampling by the car wash owner's consultant on the adjacent day care property was never performed to verify contamination had not spread or did not pose a threat. Furthermore, the RWQCB notified the parties that the site might be issued closure under the new LTCP, which would mean an end to further monitoring and/or sampling requirements. In June 2013, the case came up for a five year review by the State, which manages the UST cleanup fund. The State proposed a public notice recommending closure. The OCHCA argued that the owner's consultant should perform additional sampling to determine if vapors were intruding into the daycare center. The daycare operator also issued a letter to the RWQCB asking why no sampling had been done on this property. As a result, the UST fund manager withdrew the proposal for closure until concerns raised by the OCHCA and daycare owner were addressed.

Impacts on future owners, developers and adjacent landowners

UST cases closed under risk based programs will not necessarily be cleaned up to standards that would allow unlimited or unrestricted use of the properties. Furthermore, some closures will be granted with deed restrictions or limitations on future uses, which could decrease the overall value of a particular property or even adjacent sites. This can happen despite the issuance of formal case closures or NFA letters by regulatory agencies.

The risk based closure of sites is dependent in part on the current site uses and potential exposures or lack thereof. Should future uses of the site change, or deed restrictions require modification, this can result in a regulatory agency re-opener of the case and require additional site investigation or remediation. Future owners and developers of a site can also be saddled with costs required to manage contaminated soil left in place. Other unanticipated expenses include the possibility of foundation dewatering at the site, which could result in treatment and disposal cost for contaminated groundwater. Once a site receives closure, any future costs for managing residual contamination left in place will not likely be reimbursable under a state cleanup fund.

For property owners adjacent to a site receiving risk based closure, there is potential that groundwater may have migrated off-site and beneath nearby businesses or residences. Currently, there are few, if any, mechanisms for tracking/monitoring residual contaminants (both on- and off-site), which are assumed to remain stable or decrease after closure is issued. Some state and local governments have taken the initiative to require a Soil Management Contingency Plan for sites with remaining contamination to address risk from construction workers

or others individuals that could be exposed to subsurface contamination.

Planned acquisitions of sites with closed USTs, or properties adjacent to sites granted any kind of risk based closure, are typically subject to a Phase I Environmental Site Assessment (ESA) as part of a prudent risk management program. This due diligence may conclude that since a NFA letter was previously issued for the UST closure, any residual contamination does not constitute a material threat. The report may or may not identify the UST and remaining contamination as a Recognized Environmental Condition (REC) or Historical REC (HREC) as per ASTM. Regardless of the Phase I ESA findings and/or as a condition of the sale, any prospective purchaser could still insist on additional investigation as a condition of the sale for any area subject to risk based closure.

Less sophisticated buyers/developers and those with a higher risk tolerance might choose to proceed with acquisition and construction without any further investigation of site areas subject to risk based closure. This could lead to the discovery of petroleum related contamination on- or off-site and subsequent investigation and/or remediation expenses. Despite having NFA documentation, the discovery of new contaminants or unexpected contaminant concentrations has the potential to result in regulatory agency reporting obligations and other legal liabilities.

As a component of a sound risk management program, XL Catlin can provide pollution insurance policies to assist real estate property owners, developer, investors, and lenders. XL Catlin provides a Pollution and Remediation Legal Liability (PARLL) policy and a Real Estate Lenders Policy that can provide coverage for sites subject to risk based closure and regulatory re-opener risk.

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XL Catlin can also provide Contractor Pollution Liability coverage for consultants and contractors working at these sites. Pollution coverages typically provide first and third party remediation coverage for unknown pollutants, exacerbation of pollution conditions, as well as third party bodily injury and property damage claims and related legal defense expense. The ability to transfer some of the risks at sites subject to RBCA, and risk based UST closure programs like the California LTCP are site specific, but can alleviate unexpected development costs, claims costs, project delays, and legal liabilities.

Depending on the regulatory standards and controls in place at the time of operation and closure, historic UST sites can still represent a significant risk. Despite owners obtaining a regulatory agency "No Further Action" letter upon UST closure, there may still be residual contamination impacts to soil, soil gas, and groundwater discovered during future due diligence. This can result in potential regulatory agency re-openers at UST sites, particularly if a specific environmental pathway was not previously assessed. Because of these risks, companies undertaking property transactions of locations with existing or former UST systems must continue to scrutinize release data and "clean closure" documentation. This is especially true for leaking underground storage (LUST) sites subject to risk based corrective action or low threat closure methods.

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