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# **How To Evaluate Alternative Cleanup Technologies For Underground Storage Tank Sites**

## **A Guide For Corrective Action Plan Reviewers**

**Chapter I**  
**Introduction**

# Chapter I

## Introduction

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### Background

Per EPA's [Performance Measures](#), as of September 2016 more than 532,000 releases from leaking underground storage tanks (USTs) have been reported nationwide. Cleanups have been initiated at more than 510,000 of these sites, and more than 461,000 sites have been cleaned up. The backlog of sites still to be cleaned up is more than 70,000.

EPA promotes faster, more effective, and less costly cleanup methods. EPA's Underground Storage Tanks program continues to work with state and local governments to encourage the use of the most appropriate cleanup technology for every site. When this guide was first published in 1994, it covered the first eight technologies listed in the table of contents. The guide was updated in 1995 to include two additional technologies. EPA referred to these ten technologies as alternative technologies because although they had the ability to make cleanups faster, more effective, and less costly than traditional options, they were not widely used.

EPA updated the guide in 2004 and 2016 to include new technologies. The 2017 edition includes an appendix titled *Horizontal Remediation Wells* and an updated *Abbreviations And Definitions* appendix.

### Purpose Of This Guide

The purpose of this guide is to help state and local regulators review corrective action plans (CAPs) that propose alternative cleanup technologies. The guide does not advocate the use of one technology over another; rather it focuses on appropriate technology use, taking into consideration site-specific conditions and the nature and extent of contamination. While the guide focuses on the remediation of leaking underground storage tank sites, some of its basic concepts can also be applied at hazardous substance and hazardous waste sites.

The guide is designed to enable you to answer two basic questions when reviewing a CAP:

- Has an appropriate cleanup technology been proposed?
- Does the CAP provide a technically sound approach to the cleanup?

### Scope And Limitations

This guide provides technical guidance to UST regulators who evaluate CAPs and oversee cleanups; it focuses on engineering-related considerations for evaluating each technology. It does not provide instructions on the design of CAPs or the design and construction of remedial systems. It should not be used to provide guidance on issues such as securing permits, establishing cleanup standards, health and safety issues, state-specific requirements, or cleanup costs.

This guide is intended to be used along with published references, guidance from others experienced with alternative technologies, information from training courses, and current journals. The guide is based on available technical data and the knowledge and experience of the authors and peer reviewers.

## **How To Use This Guide**

The guide contains discussions of 13 alternative cleanup technologies and 2 appendices. Each chapter contains a table of contents to help you locate the information you need.

Each chapter contains the following resources to expedite or improve the review process:

- Flow charts to help you understand the review process and decisions for each technology
- Checklists to help you determine whether the CAP contains all of the necessary information and factors needed to evaluate each technology
- References, located near the end of each chapter, which provide sources of additional information
- Tables that present advantages and disadvantages of each technology, initial screening criteria, and other data specific to each technology

## **How To Obtain Copies Of The Guide**

The [guide](#) is available in electronic format (PDF) on EPA's UST website under Publications.