

California Environmental Protection Agency SITE INVESTIGATION AND REMEDIATION PROCESSES

Prepared in response to:

The California Land Environmental Restoration and Reuse Act (SB 32)

Overview/Purpose

The California Land Environmental Restoration and Reuse Act (SB 32, Escutia, Chapter 764, Statutes of 2001, codified in California Health and Safety Code (HSC) Sections 25401 et seq. and 57008 - 57010) was enacted to enable cities and counties to direct or conduct the investigation and remediation at brownfield sites that are outside of redevelopment areas. Under the Act, the California Environmental Protection Agency (Cal/EPA) is also required to publish an informational document describing the cleanup processes implemented by its boards and departments.

The information provided in this document is intended to explain how the Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (State Board), and the nine Regional Water Quality Control Boards (Regional Boards) make site investigation and remediation decisions under the Carpenter-Presley-Tanner Hazardous Substances Account Act (Chapter 6.8 (commencing with Section 25300), Division 20, California Health and Safety Code)(also known as the State Superfund Act) and under the Porter-Cologne Water Quality Control Act (Division 7 (commencing with Section 13000), California Water Code)(also known as the Porter-Cologne Act).

Background

Cal/EPA's mission is to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality. A clean environment is essential to the health and well being of every community. Cleanup of contamination is an important element of creating and maintaining a clean environment. In California, DTSC and the State and Regional Boards have the primary responsibility for ensuring that California's water and land are kept clean, that "hazardous substances" and "wastes" are properly cleaned up, managed and disposed of, and that natural resources are preserved for the use and enjoyment of present and future generations.

In many instances, contaminated sites can be addressed under the authority of either DTSC or the Regional Boards. Because of this overlap of jurisdiction and

authority, DTSC and the State and Regional Boards are continually working to coordinate their environmental mandates and policies to meet the needs of the State, its communities, and individual sites. They strive to make their site investigation and cleanup policies and procedures complementary of one another and, to the extent possible, to reflect a consistent approach to investigating and remediating hazardous materials releases and discharges.

Authority

The cleanup mandate and authorization for the State and Regional Boards and DTSC is found in the statutes that give each their authority. These statutes are different, and many of the distinctions between the two organizations can be traced to the differences in their authorizing statutes. The State and Regional Boards are authorized by and implement the Porter-Cologne Act. DTSC is authorized by and implements the State Superfund Act. The Porter-Cologne Act and the State Superfund Act are similar but not identical. Each was crafted in response to different environmental and legislative concerns. As a result, the Porter-Cologne Act and the State Superfund Act state their goals in different ways and define their terms differently.

<u>State Superfund Act</u>: The State Superfund Act was enacted in 1981 as a result of public demand for site cleanups that began during the late 1970s arising from sites such as the Stringfellow Acid Pits hazardous waste site near the community of Glen Avon in Riverside County.

The State Superfund Act is primarily implemented by DTSC, although it also authorizes the Regional Boards to act under its authority. Whereas the Porter-Cologne Act is focused on the preservation and protection of waters of the state for their beneficial uses and prevention of nuisance caused by discharges or threatened discharges of waste, the State Superfund Act is focused on protection of public health and the environment from threats posed by releases or threatened releases of hazardous substances.

DTSC, in implementing the State Superfund Act, uses a variety of legal mechanisms to govern activities and its relationship with parties at various stages in the site cleanup process. There are a number of orders and agreements specific to a variety of circumstances to compel Responsible Parties to respond to a release of hazardous substances. The following is a list of orders or agreements used by DTSC:

 Imminent and Substantial Endangerment Determination and Order (California Health and Safety Code section 25358.3): Used to compel investigation and cleanup of a hazardous substances release site, to characterize the nature and extent of contamination at a site, to prepare a remedial action plan, to complete necessary removal or remedial actions, etc.

- Consent Order (California Health and Safety Code section 25355.5): A
 legally binding agreement that is used when parties agree to cooperate in the
 investigation and cleanup of a hazardous substances release at a site. Its
 contents are very similar to a unilaterally issued order.
- Fence and Post Order (California Health and Safety Code section 25359.5):
 Used to compel fencing and posting of a site.
- Voluntary Cleanup Agreement (VCA): Used to provide for DTSC oversight of sites in the Voluntary Cleanup Program (VCP). Although primarily used for oversight of site assessments and site cleanups, VCAs can cover other activities such as document review. The specific activities are delineated in the scope of work for each agreement.
- Operation and Maintenance (O&M) Agreements: Used when the approved cleanup requires long-term operation and maintenance.

<u>Porter-Cologne Act</u>: The state's water quality program evolved throughout the 20th century. Its origin is in turn of the century water rights law. As California's population increased, so did demand for its water resources. This increased demand brought with it an increased need to ensure that this limited resource was adequately protected. Several reform efforts were undertaken beginning in the 1940s, culminating in the enactment of the Porter-Cologne Act in 1967.

The Porter-Cologne Act establishes that the State and Regional Boards are the principal State agencies with the responsibility to preserve and protect water quality. The State Board establishes statewide policy for water quality control, provides oversight of Regional Board operations, and also considers and issues statewide orders concerning petitions of Regional Board decisions. The Regional Boards are composed of part-time appointed nine member Boards that meet at least six times per year. Each has jurisdiction over specific geographic areas that are defined by watersheds. Day-to-day operations are delegated to an Executive Officer and supporting staff where most decisions are made on site cleanups. In addition to other regulatory responsibilities, the Regional Boards have authority to conduct, order, and oversee investigation and cleanup where discharges of waste cause or threaten to cause discharges to waters of the state that could cause or threaten to cause pollution or nuisance, including impacts to public health and the environment.

The Regional Boards, in implementing the Porter-Cologne Act, use a variety of legal mechanisms to govern activities and its relationship with parties at various stages in the site cleanup process. There are a number of orders and agreements specific to a variety of circumstances to compel Responsible Parties to respond to discharges of waste. The following is a list of orders or agreements used by Regional Boards:

- Cleanup and Abatement Orders (California Water Code Section 13304):
 Used to compel responsible parties to investigate to determine the nature and extent of the discharges, to prepare appropriate workplans, and to cleanup the waste or abate the effects of the waste.
- California Water Code Section 13267 Orders: Used to compel persons who have discharged or who are suspected of discharging waste to prepare technical reports, including monitoring.
- Cease and Desist Orders (California Water Code section 13301): Used to compel persons who violate permits or prohibitions to comply with the permits or prohibitions.
- Voluntary Actions: Responsible parties may agree to take cleanup and abatement action by agreeing in writing to pay oversight costs and conducting work as directed by Regional Board staff.

Primary Organizational Focus

The primary focus of DTSC, through the State Superfund Act, is on protecting public health and the environment. The primary focus of the State and Regional Boards, through the Porter-Cologne Act, is on protecting the State's water resources for their beneficial uses. The Porter-Cologne Act generally applies to "waste" while The State Superfund Act applies to "hazardous substances". The term "waste" covers more than the term "hazardous substances" bed e it includes salts, petroleum, sediment and other waste constituents that are not included in (or are specifically excluded from) the term "hazardous substances". The Porter-Cologne Act applies where there is any discharge of waste that has caused or threatens to cause "pollution" (e.g., a discharge impacts beneficial uses of water or threatens to impact public health even if not related to water quality) or nuisance. It applies to discharges of waste directly to waters, to discharges of waste to land where the waste may migrate to groundwater or discharge to surface water, and to discharges into or from pipes or conveyances. The Regional Boards have jurisdiction to require cleanup where there are discharges of waste to waters or discharges of waste that threaten to discharge to water and cause pollution or nuisance, and where there are discharges that violate permits or prohibitions.

The State Superfund Act applies to any site where a release of hazardous substances has occurred, regardless of what is threatened by the release. In general, DTSC's has jurisdiction over releases or threatened releases of hazardous substances that may pose a threat to public health and the environment, including releases to both soil and groundwater.

Cleanup Procedures and Considerations

DTSC

The cleanup process implemented by DTSC begins with site discovery or notification to DTSC of possible releases of hazardous substances. Various parties, including citizens and local agencies, as well as DTSC and other State agencies, can provide information that is used to screen sites. Once it is determined that a release of hazardous substances may have occurred, DTSC evaluates the potential threat the site poses through a sequence of steps. DTSC's cleanups are required to be consistent with the National Contingency Plan (NCP), federal regulations that apply to responses to hazardous substance releases. In addition, DTSC's cleanups must comply with requirements that are found in the State Superfund Act, and must be consistent with the plans and policies of the State and Regional Boards.

DTSC generally uses the following steps in making its cleanup decisions:

Site Discovery

Site discovery is the Identification of known or potentially contaminated sites that were previously unknown to DTSC. A site can be discovered through any number of ways, but often come by way of referrals from other governmental agencies (federal, State or local), from private citizens in the form of complaints, voluntary reports by potentially responsible parties or project proponents, investigations and screenings that DTSC is involved in either independently or through funding from U.S. EPA. The focus of discovery may change over time as statutes and regulations change.

Site Screening

Site screening is a process to determine if further evaluation of a property is needed, as well as to determine if a site falls within the jurisdiction of DTSC. Its purpose is to determine whether there is evidence that a release of a hazardous substance has occurred, or is there evidence that a release may have occurred. The information used at this stage is similar to a Phase I Environmental Site Assessment used when performing due diligence during property transfer.

Site screening looks at public and private records, current and historical land uses, prior releases of a hazardous material, data base searches, reviews of relevant files of federal, state, and local agencies, visual and other surveys of the property and general vicinity, interviews with current and previous owners and operators, and review of regulatory correspondence and environmental reports.

<u>Preliminary Endangerment Assessment</u>

A Preliminary Endangerment Assessment (PEA) is an evaluation of a site to determine whether current or past waste management practices have resulted in the release or threatened release of hazardous substances or materials that pose a threat to public health or the environment. Essentially, it takes the information from a Phase I Environmental Site Assessment along with information from environmental samples that are collected based on that information, and calculates potential risk using a variety of conservative assumptions that are based on a site being used for residential development.

The specific objectives of a PEA are to determine if a release of hazardous substances has occurred, and to describe the general extent of contamination. In addition, the PEA estimates the potential threat to human health and the environment and provides an indication of the relative risk. Based on this indication, decisions can be made whether to do nothing because the site does not pose a threat, to do a removal action to reduce the threat, or to do a full cleanup. A PEA includes information about the surrounding community to assess their level of interest and desire for information about the site.

Remedial Investigation/Feasibility Study

If a cleanup is determined to be necessary, the next step is to prepare a Remedial Investigation/Feasibility Study (RI/FS). The RI/FS includes the process for characterizing the nature and extent of the contamination, estimating the risk the contamination poses to the public or the environment, and evaluating possible cleanup alternatives.

The objective of the RI/FS process is to gather enough information to support an informed decision as to which of the possible cleanup alternatives is the most appropriate at the site.

Remedial Action Plan

After completion of the RI/FS, a Remedial Action Plan is developed (RAP). The RAP details the selected remedy and how that decision was made. A typical RAP will identify the preferred cleanup alternative and explain the reasons for the preference, describe the other alternatives considered, and solicit public comments on all the alternatives described

A RAP will not contain specific engineering design details, but contains specific remedial action objectives including cleanup levels and time frames for completion.

Remedial Design & Design Documents

After the RAP has been approved, then begins the development of the actual technical and operational plans for implementing the selected alternative. The Remedial Design and Design Documents provide specific engineering design details of the proposed remedial action. The Remedial Design and Design Documents would also include plans for what will occur as the cleanup proceeds, such as health and safety plans and transportation plans.

Implementation of Remedial Action

After the Remedial Design and Design Documents have been approved, the actual site cleanup process begins. The steps of cleanup detailed in the RAP and Remedial Design and Design Documents are implemented and evaluated to make sure that all is working as planned.

Certification

When the cleanup has been fully implemented and completed, DTSC may certify, or attest that, the cleanup activities have been satisfactorily completed. The certification provides "closure" for those who conducted the cleanup.

Operation & Maintenance

If a site cleanup involves long-term cleanup activities (e.g., groundwater treatment system, soil vapor extraction system, site cap, sites with residual contamination and institutional controls), operation and maintenance activities will need to be performed to ensure that the systems continue to operate, that they continue to be effective, and that resources continue to be made available to maintain the systems. DTSC typically enters an operation and maintenance agreements with the project proponent where long-term activities are involved.

5-Year Reviews

For sites with long-term operation and maintenance activities, DTSC periodically evaluates the implementation and performance of the cleanup to determine if it continues to be protective of the public and the environment. These evaluations occur approximately every three years, but are required no less than every 5 years

Removal Actions

In the course of cleanups, there are often limited activities that may prove beneficial to occur quickly, rather than wait until the entirety of the above process occurs. A removal action is typically a short-term or limited activity designed to stabilize or clean up a site posing an immediate threat, or where there has been an accidental release. In some cases, the removal action will

be the entire cleanup at a site. Removal actions can cost no more than \$1 million.

Removal actions are done based on a Removal Action Workplan (RAW). The requirements for a RAW are more limited than for a full cleanup. The RAW includes a detailed engineering plan for conducting the removal action, a description of onsite contamination, cleanup goals to be achieved, and an analysis of alternatives considered and rejected (including why they were rejected). The RAW must also include a profile of the surrounding community, and is circulated for a minimum 30 days for public comment. A public meeting may also be required prior to conducting a removal action depending on the community interest.

State Board/Regional Boards

The Regional Boards, in overseeing cleanups, focus on reaching specific goals rather than prescribing a process (by law they may not prescribe the manner of compliance). The State Board has adopted policies and procedures that specify performance standards for Regional Board cleanups, but allow Regional Boards flexibility to respond to site-specific conditions.

The general procedures for Regional Board cleanups are outlined in State Board Resolution 92-49. Resolution 92-49 describes a progressive sequence of activities. Regional Boards may adjust these steps to fit site-specific circumstances. To improve the pace of cleanups and to reduce costs, Regional Boards are encouraged to allow investigation and cleanup activities to occur simultaneously rather than sequentially, provided it doesn't compromise the overall cleanup.

Preliminary Site Assessment

A preliminary site assessment is an assessment to confirm that a discharge of waste has occurred or threatens to occur and to identify the dischargers. Regional Boards attempt to identify as many responsible dischargers as possible to participate in the cleanup process. The assessment also identifies affected or threatened waters of the state and their beneficial uses, and collects preliminary information on the nature and extent (both vertical and horizontal) of the discharge.

Soil and Water Investigation

If the preliminary assessment indicates that a discharge has likely occurred, an investigation is necessary to determine what affect it has had on the environment. A soil and water investigation is an investigation to determine the source, nature and extent of the discharge with enough detail to provide the basis for decisions regarding subsequent cleanup and abatement actions, if any are necessary. The discharger submits an investigation work plan

prepared by qualified professionals for Regional Board review. The Regional Board reviews the plan and, if it is acceptable, concurs with the proposed activities.

Cleanup and Abatement Plan

If cleanup or abatement is determined to be necessary, the next step is for the discharger to propose and select a cleanup and/or abatement action. The proposed actions are evaluated to determine if they will be effective and feasible, and recommendations are made on the preferred cleanup alternatives. Acceptable cleanup levels are based on levels that have been set by the Regional Board for similar circumstances that involve similar wastes, site characteristics, and water quality considerations. The proposed cleanup level must comply with plans and policies of the State and Regional Board, including compliance with State Board Resolution 92-49.

Implementation

After the cleanup plan has been approved, the actual site cleanup process begins. The steps described in the plan are implemented and monitored to make sure that all is working as planned. As the cleanup activities progress, the discharger is to provide progress reports.

Monitoring

If a site cleanup involves long-term cleanup activities (e.g., groundwater treatment system, soil vapor extraction system) ongoing monitoring will need to be performed to ensure that the systems continue to operate, that they continue to be effective, and that resources continue to be made available to maintain the systems. Monitoring is usually required to confirm that the cleanup goals have been achieved.

Oversight Requirement: Not all investigation and cleanup activities require oversight. A Regional Board can identify activities that the discharger can do without oversight, provided the activities are consistent with Regional Board policies and procedures.

<u>Timing</u>: The cleanup schedule approved by Regional Board must take into account the threat the site poses, the obligation of the discharger to achieve timely compliance with the Regional Board's cleanup and abatement goals, the dischargers available financial and technical resources, and the desire to minimize the possibility of imposing the cleanup costs on the people of the State.

Differences in Processes/Approaches

There are distinct differences between the statutory authorization and the organizational structures of DTSC and the Regional Boards. In addition, the processes and procedures that are used by either to oversee or conduct investigations and cleanups are similar yet distinct and different. Although different, the fundamental goal of either cleanup process is to provide environmental protection and address public health issues. This unifying goal tends to result in cleanups that are equivalent in public health and environmental protectiveness, regardless of the process used to achieve that goal.

Organizational Programs

DTSC

At DTSC, the following programs direct site cleanups:

<u>Site Mitigation and Brownfields Reuse Program</u>: The Site Mitigation and Brownfields Reuse Program, DTSC's primary cleanup program, is made up of various divisions that focus or specialize on particular types of sites:

Statewide Cleanup Operations Division – DTSC's Statewide Cleanup Operations Division coordinates all aspects of a cleanup from investigation through certification. Within this division are, among other cleanup programs, DTSC's Voluntary Cleanup Program and Expedited Remedial Action Pilot program. This division manages most of the brownfields cleanups overseen by DTSC.

School Property Evaluation and Cleanup Division – DTSC's School Property Evaluation and Cleanup Division works to ensure that all new, existing, and proposed school sites are environmentally safe. The activities of this division were mandated by legislation enacted in 1999.

Office of Military Facilities – DTSC's Office of Military Facilities (OMF) is responsible for investigation and oversight of cleanup activities at contaminated sites that are or were previously operated by the federal Department of Defense.

Hazardous Waste Management Program: The Hazardous Waste Management Program (HWMP) regulates the generation, storage, transportation, treatment and disposal of hazardous wastes to ensure that all activities are done safely and properly. Two divisions within HWMP also are involved in "corrective action" (cleanup related activities to "correct" the effects of improper waste management):

Permitting Division – DTSC's Permitting Division directs corrective action and closure activities, including cleanup and long-term maintenance of closed hazardous waste facilities.

State Regulatory Programs Division – DTSC's State Regulatory Programs Division oversees corrective action to ensure that any releases of hazardous constituents at generator facilities that conduct onsite treatment of hazardous waste are safely and effectively cleaned up.

Regional Boards

At the Regional Boards, the following programs direct most site cleanups:

Spills, Leaks, Investigations and Cleanup Program – The Regional Boards' Spills, Leaks, Investigations and Cleanup Program (SLIC Program) oversees investigation and cleanup of sites, other than underground storage tank sites, where wastes have been discharged. Such sites may include private sites and federal or state owned sites. Under this program, Regional Board program managers oversee investigation and cleanup at sites ranging from large and complex sites, to smaller, easily accomplished cleanup sites. The SLIC Program addresses a combination of voluntary as well as mandated cleanups (sites where an order has been issued or the cleanup is otherwise required). The program primarily operates on a cost reimbursement basis.

<u>Underground Storage Tank Program</u> –The State and Regional Boards' Underground Storage Tank Program (UST Program) oversees cleanup and management of petroleum fuel underground storage tank sites. It includes a State Board cleanup grant program for sites that are eligible. Cleanups at these sites are overseen either by the Regional Boards or by local governmental agencies under contract with the State Board. The UST Program is by far the Regional Boards' largest program in terms of number of sites.

Aboveground Storage Tank Program – The State and Regional Boards' Aboveground Storage Tank Program (AST Program)

<u>Landfills</u> - The State and Regional Boards Land Disposal Program – Regional Boards issue permits for operation of solid and designated waste land disposal facilities (Class II and III) and oversee corrective action (i.e., cleanup) of groundwater at solid and designated waste land disposal facilities.

Responsible Parties

Both DTSC and the Regional Boards rely on those who have caused the pollution or who own the contaminated property to perform the cleanup. They are called Responsible Parties or Potentially Responsible Parties (PRPs), and may include past owners or operators of site where a discharge or release has occurred. In most instances, preliminary site work includes identifying the potentially responsible parties so that as many of them as possible can be included in the cleanup process.

Voluntary Cleanups

Both DTSC and the Regional Boards also participate with proponents of development projects to clean up sites. In many instances, the proponent of a cleanup who is not a Responsible Party will approach DTSC or a Regional Board seeking their oversight and approval for site cleanup activities so that the site may be made available for another use. Oftentimes, these proponents are either developers or local redevelopment agencies that do not own the property or are not otherwise responsible for the contamination at the site. In these instances, DTSC and the Regional Boards will work with the project proponents and enter into voluntary agreements that more resemble reimbursement agreements than enforceable agreements. Under these agreements, DTSC and the Regional Boards review and comment on site cleanup documents, and their time and costs are reimbursed. The cleanup procedures followed under these agreements are generally the same as for other site cleanups.

Public Participation

A broad range of public participation activities are conducted by DTSC and the Regional Boards. In most cases, these activities are tailored to the level of community interest. Activities may include community profiles and surveys, project fact sheets, public meetings and hearings, and other opportunities for public comments and involvement.

Regional Boards: For Regional Boards, opportunities for public participation are designed to meet the level of public interest. Site cleanup information is made available through "Interested Persons" mailing lists, public meeting and hearings, and on the State Board and Regional Boards' Internet sites. The Regional Boards also hold public hearings and meetings, usually monthly, where interested persons can comment on Board actions. The Regional Boards may also hold public meetings concerning a specific site if circumstances warrant. The Porter-Cologne Act contains requirements to notify interested persons of

public hearings or meetings concerning a site, and contains some very specific notice requirements including a requirement that the Regional Boards must publish a list of sites where MTBE has been detected in groundwater.

DTSC: DTSC integrates participation by the public into its site cleanup process. Public participation activities include developing and distributing fact sheets describing the project, public meetings, circulation of cleanup plans for public comment, as well as other opportunities for the public to interact in the cleanup process. For most cleanups, DTSC requires a public participation plan be developed that describes how the public will be informed and involved.

Additional Information

For more information about the DTSC and Regional Board site investigation and cleanup processes and steps that a responsible party or discharger may be required to take to investigate and remediate threats posed by unauthorized hazardous substance release or waste discharge, the environment, and the waters of the State, contact:

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Internet Sources

Additional information is available at:

Cal/EPA:

http://www.calepa.ca.gov/Brownfields/

State Water Resources Control Board:

Website: http://www.swrcb.ca.gov/quality.html

Geotracker: http://geotracker.swrcb.ca.gov/

Department of Toxic Substances Control:

- Policies and Procedures
 http://www.dtsc.ca.gov/PolicyAndProcedures/SiteCleanup/SiteCleanup_policies.html
- Fact Sheets and Guidance documents
 http://www.dtsc.ca.gov/database/Publications/prog-pubs.cfm?prog-site-mit
- How to report a spill http://www.dtsc.ca.gov/SiteCleanup/ERP/Off Hwy.html
- Obtain information on hazardous substance releases from CalSites database http://www.dtsc.ca.gov/database/Calsites/calf001.cfm