

**LOS ANGELES COUNTY
CERTIFIED UNIFIED PROGRAM AGENCY
SITE MITIGATION UNIT
SITE MITIGATION GUIDANCE DOCUMENT**

The primary mission of Los Angeles County CUPA, Site Mitigation Unit (SMU) is the protection of public health and safety and the environment from the effects of significant hazardous material releases. This is accomplished by assessing risk/hazard and overseeing decontamination of media, structures, and equipment by removing or treating hazardous constituents, minimizing threat of exposure by the use of engineering controls (e.g. fencing and site capping) and instigating institutional controls (e.g. deed restrictions) to establish constructive public notice regarding residual contamination, when a permanent remedy is not possible or feasible.

The ultimate goal of the site mitigation process is to properly assess and remediate hazardous waste release sites by identifying the nature and extent of contamination, evaluating the associated risks, remediating impacted areas and verifying that remaining residual contaminants do not pose a significant threat to human health or the environment for the present/anticipated use.

This document is prepared to assist in the review and preparation of workplan for remediation of hazardous waste release sites. The guidelines are general in nature and each site or facility may present unique concerns which must be specifically addressed. This document is not intended to provide all site mitigation process details which may be found in the various Federal and State guidelines.

This is a working document and will be revised and updated frequently in the near future. SMU will work and coordinate with the Department of Toxic Substances Control (DTSC) to establish a Work Group which will be responsible to create procedures for various phases of the site mitigation process.

INTRODUCTION

Los Angeles County CUPA, Site Mitigation Unit (SMU) shall establish a corrective action process that fulfills the following as required by Title 22, Chapter 50, Article 1.5, §68400.16:

(1) Opportunities for a full and meaningful public involvement.

(A) For a less complex site, public involvement shall include, but not be limited to:

Providing the public with the SMU's contact name, address, email, and phone number;

Distribution of fact sheets or other information regarding conditions at the site, if warranted, given the level of interest expressed in the site, notification before decisions are made regarding corrective action at the site; and

The opportunity to participate in decisions, submit comments and receive responses to comments before final SMU approval of activities at the site.

(B) For all other corrective action, public involvement shall include, but not be limited to:

An assessment of community interest and preparation of a community profile;

Based on the level of community interest, distribution of fact sheets regarding conditions at the site;

Placement of a public notice in a local newspaper of general circulation announcing a 30-day comment period on a proposed corrective action plan;

Based on the level of community interest, a public meeting, if appropriate, to collect public comment on the proposed corrective action; a written response to public comments; and

Providing the public with the SMU's contact name, address, email, and phone number.

(2) A requirement for site screening using a Preliminary Endangerment Assessment performed as defined in Health and Safety Code section 25319.5.

(3) A requirement for a site investigation that adequately evaluates and characterizes a release or threat of release at the site of hazardous waste or constituents and determines

whether the release or threatened release poses an unreasonable risk to human health and safety or the environment. This investigation shall include, but not be limited to:

- (A) Adequate characterization and documentation of the release or threat of release;
- (B) A risk assessment, where appropriate, that evaluates the risk posed by the release or threatened release;
- (C) If the release has affected groundwater, a reasonable characterization of underlying groundwater including present and anticipated beneficial uses of that water; and
- (D) If volatile organic compounds are present, a reasonable characterization and evaluation of risk associated with exposure to indoor air.

(4) Specification of corrective action that is protective of human health and the environment. Such corrective action shall attain final cleanup levels determined using a site-wide cumulative carcinogenic risk range of 10^{-4} to 10^{-6} and a site-wide cumulative systemic toxicity, including sensitive subgroups, health hazard index of <1 , unless lower concentrations are necessary to protect ecological receptors or meet applicable water quality objectives in applicable water quality control plans, as determined by a water quality assessment that evaluates whether constituents are migrating to waters of the state and meet state policies for water quality adopted pursuant to Article 3 (commencing with section 13140) of Chapter 3 of Division 7 of the Water Code. The 10^{-6} carcinogenic risk level shall be used as a point of departure in establishing cleanup levels for known or suspected carcinogens. Under these conditions, final cleanup levels shall be based upon the following:

- (A) Background or non-detectable concentrations, or
- (B) Site-specific cleanup levels based on a risk assessment(s), which may include a human health risk assessment and/or an ecological risk assessment, as needed, if the following requirements are met:

1. The risk assessments prepared at the request of SMU are reviewed and approved by the State Office of Environmental Health Hazard Assessment (OEHHA). To be approved, the risk assessment approach shall meet the following criteria:

Evaluate exposure to all chemicals present at the site from all sources at the site.

Evaluate that exposure for all affected and potentially affected human populations, considering all affected media at the site and all pathways appropriate for the site.

The pathways approved by SMU and shall be based on the contaminants present at the site, the media contaminated, fate and transport of the contaminants through the environment, the routes of exposure and the receptors.

2. The ecological risk assessment shall consider species representing the ecosystems are present or potentially present at the site. It shall consider the fate and transport of the contaminants present at the site, including movement through the food web. Sites with significant ecological impact will be referred to DTSC.

(5) Adequate resources and oversight to ensure that corrective action is conducted in an appropriate and timely manner and that technical assistance and streamlined procedures, when appropriate, are available.

(6) Mechanisms for written documentation of screening, investigation, and selection of corrective action, the written approval of corrective action plans; and a certification of similar documentation indicating that corrective action is complete.

(7) Enforcement of the completion of corrective action if the responsible party fails to complete the necessary corrective action, including operation and maintenance or long-term monitoring.

(8) A requirement for financial assurance for corrective action implementation, operation, maintenance and monitoring, if implementation of corrective action is scheduled to take more than one year or if long-term maintenance or monitoring of corrective action is required.

(A) Financial assurance mechanisms shall be consistent with the provisions in section 66264.143, and shall be reviewed and approved by SMU.

(B) Financial assurance mechanisms that may be used to fulfill this section include a trust fund; a surety bond guaranteeing payment into a trust fund; a surety bond guaranteeing performance of corrective action implementation, operation, maintenance and monitoring; a letter of credit; insurance; or a financial test and guarantee.

(9) A requirement for a land use control that imposes appropriate conditions, restrictions and obligations on land use or activities if, after completion of the corrective action, a hazardous waste or constituents remain at the site at a level that is not suitable for unrestricted land use. One or all of the following may be required when a deed restriction is proposed on a facility.

(A) SMU shall notify the local land use planning authority in which any site is located that corrective action has been proposed. SMU shall provide the local land use planning authority with notice of the time, date, and place of all public meetings regarding the corrective action and shall involve the local land use planning authority in any deliberation concerning land use conditions or actions. SMU shall request the local land use planning authority to provide the SMU with the local land use planning authority's assessment of the planned use of the site, including the current and future zoning and general plan designations for the site and the local land use planning authority's determination regarding the appropriate planned use designation in the corrective action plan prepared for the site.

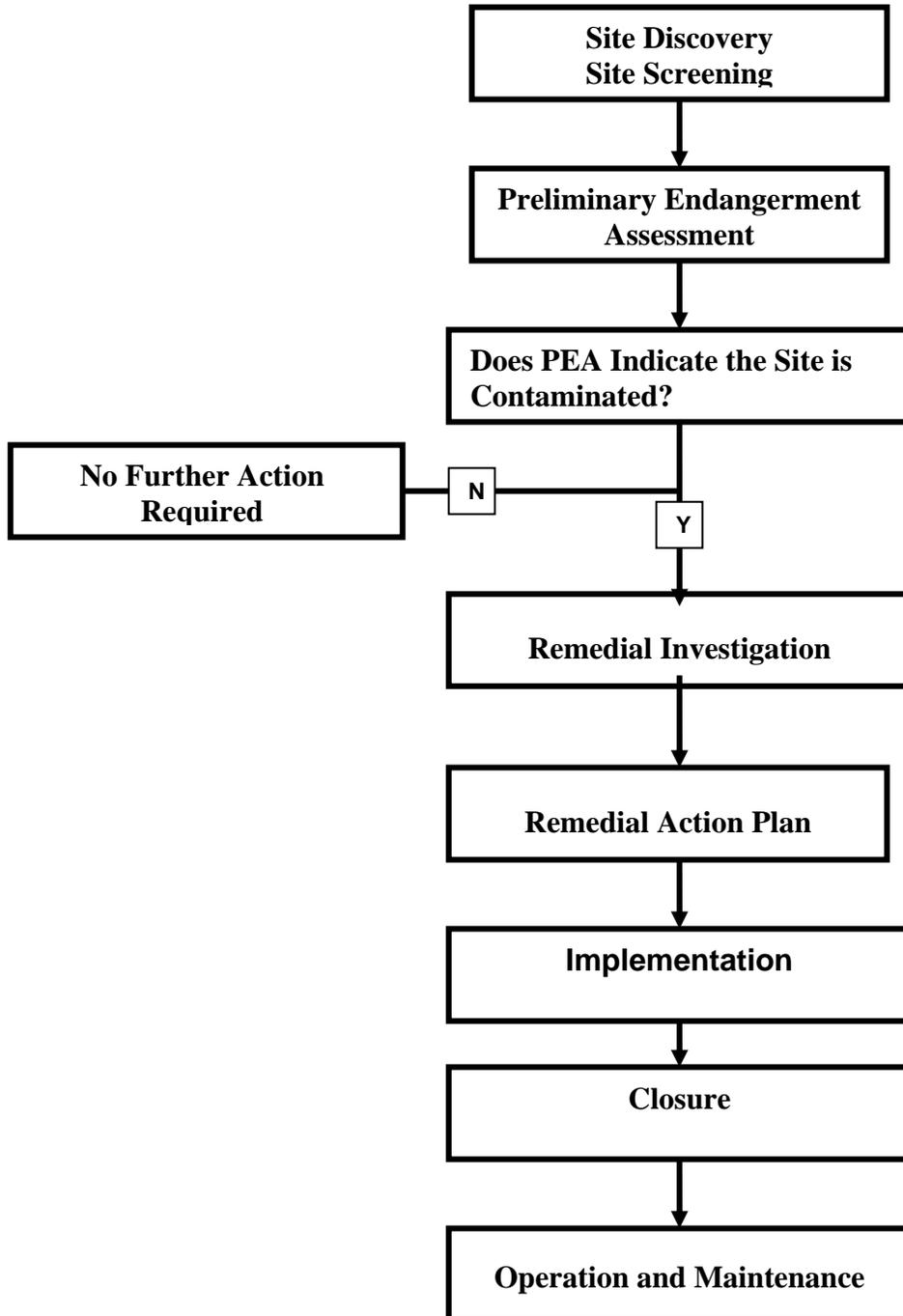
(B) Any land use condition shall be executed by the owner of the land, shall run with the land, and is binding upon all of the owners of the land, their heirs, successors and assignees, and their agents, employees or lessees. All executed land use conditions shall be recorded by the site owner in the county in which the site is located within ten days of execution. The site owner shall provide SMU with a copy of the land use conditions, which have been appropriately recorded.

(C) If a corrective action plan requires the use of a land use control, SMU shall not certify that the corrective action is complete until the SMU receives a certified copy of the recorded land use control.

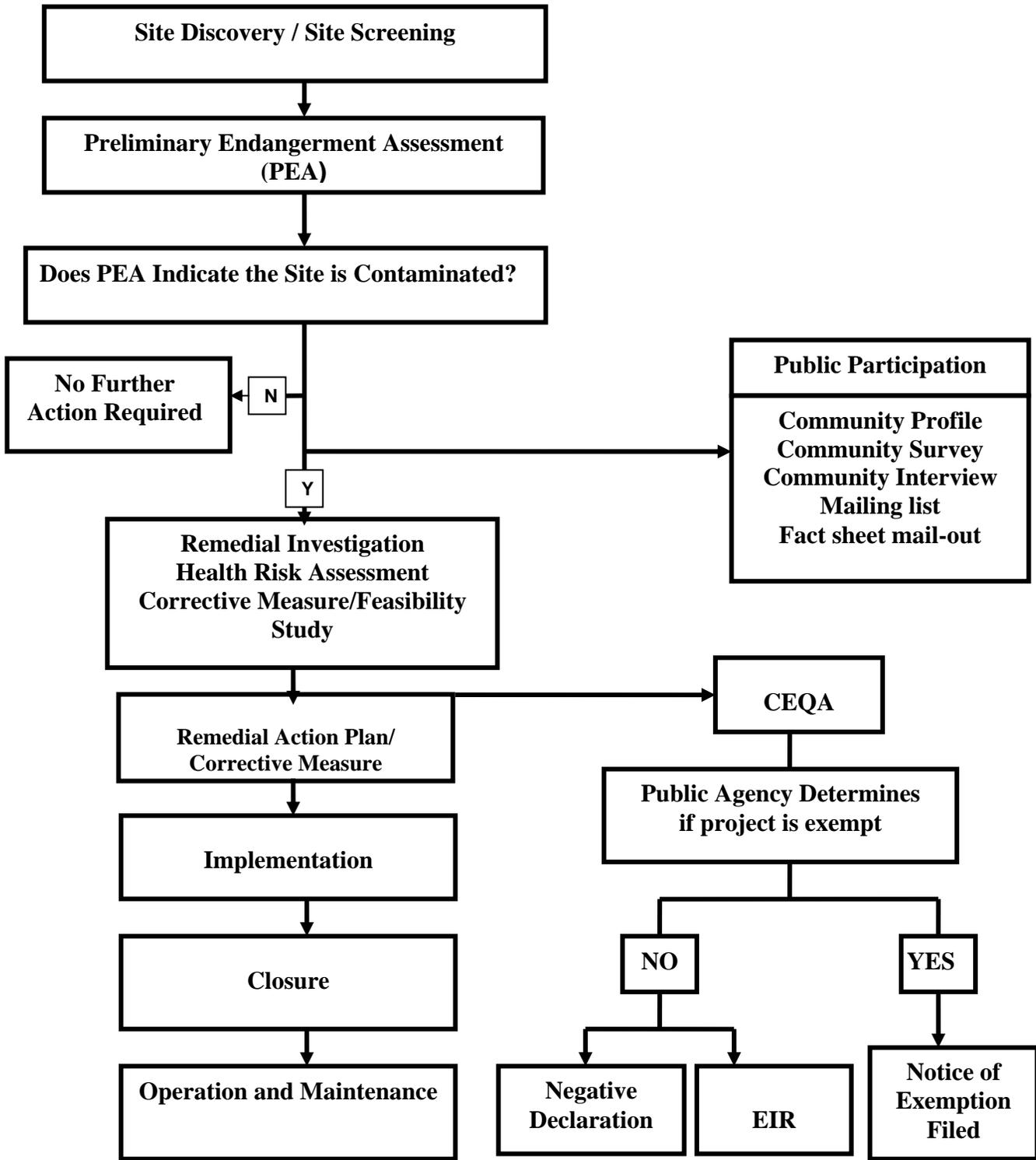
SMU SITE MITIGATION PROCESS

- **SITE DISCOVERY**
- **SITE SCREENING**
- **CONSENT AGREEMENT**
- **PRELIMINARY ENDANGERMENT ASSESSMENT**
- **HEALTH AND SAFETY PLAN**
- **PUBLIC PARTICIPATION**
- **REMEDIAL INVESTIGATION**
- **RISK ASSESSMENT**
- **CORRECTIVE MEASURE STUDY/FEASIBILITY STUDY**
- **THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**
- **REMEDIAL ACTION PLAN/CORRECTIVE MEASURES**
- **CLOSURE**
- **OPERATION AND MAINTENANCE**

Overview of SMU Site Mitigation Process
Less Complex Sites/Tier I Sites



Overview of SMU Site Mitigation Process
Complex Sites/Tier II Sites



SITE DISCOVERY

Process to identify known or potentially contaminated sites that may impact public health or the environment. Sites usually are discovered through following:

- Voluntary Oversight Requests.
- Emergency, Enforcement, or Inspection Units Referrals.
- Other Agency Referrals.

SITE SCREENING

Process to determine if further evaluation of a site is needed and if the site falls under the jurisdiction of Los Angeles County CUPA (LACoCUPA) or must be referred to other agencies. In addition to reviewing reports, a site inspection should also be conducted. The following is the SMU Initial Review for Site Screening process:

SMU INITIAL REVIEW

- Site History to include:
 1. Type of Industry
 2. Types of Chemicals Used
 3. Volume of Chemicals Used
 4. Potential Release Points
 5. Known Previous Releases
 6. Waste Management Practices
 7. Size and Layout of Site
 8. Location of Tanks, Conduits, Process & Storage Area, Other
- Site Topography
- Site Geology
- Depth to Groundwater
- Previous Sample Results
- Agency Record Review
- Relevant Databases Review
- Previous Inspection Records
- Complaint History
- Current Agency Involvement
- Applicable Regulatory Requirements, Chemical Toxicity and Screening Levels

Furthermore,

Develop a List of Questions and Unresolved Issues
Prepare Site Folder, Document your Review and Login Site into the Envision Database
Determine/Document Property Owner, Responsible Party (RP), Environmental Consultant
Contact RP and/or Consultant, Discuss unresolved Questions and Issues
Determine if Hazardous Waste Release Confirmed
Rank/Prioritize Site

Determine Proper Lead Agency
If the site information indicates potential or verified contamination, determine the lead agency and if LACoCUPA is the lead, request the RP:

-To Sign a Consent Agreement.

-To Submit a Preliminary Endangerment Assessment (PEA).

If site does not fall under LACoCUPA jurisdiction, refer the site to appropriate agency.

CONSENT AGREEMENT (see attached)

PRELIMINARY ENDANGERMENT ASSESSMENT

PEA is performed to determine if current or past site activities at the site have resulted in the release or threatened release of hazardous substances or materials which may pose a threat to public health or the environment. Review PEA and complete PEA review check list to determine:

-Is or Was There a Release?

-Is the Release Delineated?

-Estimate the Threat to Public Health and the Environment.

-Is Removal Action Required?

-Can the Site be Closed without Further Investigation? If, so, Issue Closure Letter; or

-The Site Needs Further Investigation and Mitigation, if so, - Request a Remedial Investigation/Feasibility Study and Prepare a Public Participation Plan (when applicable)

PEA CHECK LIST

- I. Introduction
 - A. Purpose & Scope of Work
 - 1. Site Introduction
 - 2. Organization of Report
 - 3. Reason for Performing the PEA
 - 4. Types & Years of Site Operations
 - 5. Guidance Documents Followed
- II. Site Description
 - A. Site Identification (ID) Information
 - 1. Site Name
 - 2. Contact Person(s)
 - 3. Site Address
 - 4. Mailing Address
 - 5. Phone Number
 - 6. Other Site Names
 - 7. U.S. EPA ID Number
 - 8. EnviroStore ID Number
 - 9. Assessor's Parcel Number (APN)

10. Assessor's Parcel Map(s)
11. Land Use & Zoning

- B. Site Maps
 1. General Location map
 2. Detailed Site Diagram

III. Background

- A. Site Status/Historical Site Information
 1. Business Type
 2. Years of Operation
 3. Prior Land Use
 4. Facility Ownership/Operators
 5. Property Owners
 6. Surrounding Land Use

B. Hazardous Substance/Waste Management Information

1. Business/Manufacturing Activities
 - a. Types/Quantities of Products/Services
 - b. Types/Quantities of Hazardous Substances/Wastes
 - c. Chemicals/Materials Used, Handled and/or Sold
 - d. Description of Physical/Chemical Processes Used On-Site
2. On-Site Storage, Treatment & Disposal
 - a. Storage Units
 1. Type
 2. Capacity
 3. Contents
 4. Location
 - b. Treatment Facilities
 1. Type
 2. Capacity
 3. Location
 - c. Disposal Practices
 1. Type
 2. Volume Disposed
 - d. Waste Containment Measures
 - e. Waste Recovery/Recycling Practices
 - f. Waste from Off-Site Sources
 1. Origin
 2. Types
 3. Quantities
 - g. Identification of Leaks, Spills, Releases or Threats of Releases

3. Regulatory Status

- a. Federal Permits
- b. State Permits
- c. Local Permits
- 4. Inspection Results
 - a. Significant Findings
 - b. Significant Sampling Results (Summary)
- 5. Prior Assessments
 - a. Identification
 - b. Evaluation
 - c. Summary

IV. Apparent Problem

A. Sources of Contamination (Known/Unknown)

B. Documentation of Spills/Releases

- 1. Date
- 2. Location
- 3. Materials
- 4. Quantities

C. Contaminants of Concern

D. Identify Primary Human Resource of Concern

- 1. Direct Contact
- 2. Air
- 3. Surface Water (Runoff)
- 4. Groundwater

E. Identify Primary Environmental Resources of Concern

- 1. Direct Contact
- 2. Air
- 3. Surface Water (Runoff)
- 4. Groundwater

V. Environmental Setting

A. Factors Related to Soil Pathways

- 1. Topography
 - a. On-Site
 - b. Off-Site
- 2. Impacts from Releases
- 3. Prominent Hydrologic Soil Group
- 4. Soil Permeability
 - a. Most Permeable Layer
 - b. Least Permeable Layer
- 5. Slope of Site & Intervening Terrain
- 6. Site Accessibility

7. Direct Contact Prevention Measures
 8. Nearest Human Resources (<1-mile radius)
 - a. Residential Area
 - b. School
 - c. Business
 - d. Day Care Center
 - e. Nursing Home
 - f. Senior Citizens Community
 - g. Hospital
 - h. Jail/Prison
 - i. Other
- B. Factors Related to Water Pathways
1. Documented Release & Rationale
 2. Identify Known Aquifers (Description of Hydrogeology)
 - a. Depth
 - b. Hydraulic Conductivity
 - c. Confining Layers
 - d. Aquifer Interconnections
 - e. Other Features of significance
 3. Contaminated Aquifers
 - a. Contaminated or Threatened by Release
 - b. Threatened by Interconnected Contaminated Aquifer
 4. Aquifer/Well Information (within a 3-mile radius)
 - a. Use(s)
 - b. Distance to Nearest Well & Drinking Water Well
 - c. Directions & Velocity of Aquifer Flow
 - d. Number of Service Connections & Population Served
 5. Contaminant Migration Route(s) Due to Runoff/Flooding
 6. Potentially Affected Locations & Uses
 - a. Surface Waters
 - b. Marshlands
 - c. Wetlands
 - d. Wildlife Habitats
 - e. Location & Distance to the Nearest Affected Zone (a-d)
 7. Surface Runoff Prevention/Mitigation Measures
 8. Population/Acreage Served (per each intake)
 - a. Number of People Drinking Water
 - b. Number of Livestock or Poultry Consuming Water
 9. Percent Slope
 - a. Site
 - b. Intervening Terrain to Surface Water Accepting Runoff
 10. Runoff Flow
 - a. Distance from Release to Water Body Entry
 - b. Distance from Entry to Intakes
 - c. Use of Intakes

11. Identification of Flood Plain
12. Sensitive Populations Served

C. Factors Related to Air Pathways

1. Documented Release or Threatened Release
2. Known or Potential Source(s) & Mechanism
3. Daily Wind Direction & Average Velocity
4. Local Seasonal Climatic Factors
5. Timing of Release
6. Dispersion Route(s)
7. Population of Affected Residents & Workers
8. Location & Distance to Impacted Areas
 - a. Commercial/Industrial
 - b. National/State Parks, Forests, Wildlife Reserves & Residential Areas
 - c. Prime & Non-Prime Agricultural Lands
 - d. Historic/Landmark Sites
9. Locations & Distance to Sensitive Environments
 - a. Schools
 - b. Day Care Centers
 - c. Hospitals
 - d. Retirement Communities
 - e. Any Other Sensitive Populations
 - f. Coastal Wetlands (within a 2-mile radius)
 - g. Fresh Water Wetlands (within a 1-mile radius)
 - h. Special (Endangered) Species Habitat ((within a 1-mile radius)

VI. Regional/Local Geology & Hydrogeology

- a..Soil Types
- b..Depth to Ground Water
- c.Aquifers

VII. Sampling Activities & Results

A. Past Sampling

1. In a Manner Consistent w/DTSC Standards & Guidance
2. Agency/Company Conducting Sampling
3. Agency/Company Providing Analytical Lab Services
4. Sampling Plan(s) & Map(s)
5. Dates (Collection, Receipt & Analysis)
6. Methodology (for Sample Collection & Lab Analysis)
7. Sample Preparation & Handling
8. Evaluation of Results
9. Quality Assurance/Quantity Control (QA/QC)

B. PEA Sampling

1. Sampling Plan & Site Safety Plan
2. Summary of Activities (Actual work Performed)
 - a. Field Decisions Made

- b. Sampling Plan Deviations & Rationale
- 3. Sample Collection, Handling & Analysis

C. Presentation of Data

- 1. Summary of Sample Analysis Results (per each medium)
- 2. Minimum Information
 - a. Chemical Name
 - b. Sample Type
 - c. Sample ID Number or Location
 - d. Detection Limit & Units
 - e. Date of Collection Analysis
- 3. Quality Assurance/Quality Control (QA/QC)

D. Evaluation of Results

- 1. Summary of Conclusions
- 2. Secondary Analysis (Confirmation of Results)

VIII. Human Health Screening Evaluation

A. Exposure Pathways & Media of Concern

- 1. Conceptual Site Model
- 2. Exposed Population for Each Pathway

B. Exposure Concentrations & Chemicals

- 1. Identify Chemicals of Concern
 - a. Physical Constants
 - b. Concentrations (for each medium)
- 2. Background Level Data

C. Toxicity Values

- 1. For Each Chemical of Concern
- 2. For Each Exposure Route

D. Risk Characterization Summary

- 1. Significant Findings & Determinations
- 2. Cancer Risk/Hazard Over All Chemicals/Exposure Routes
- 3. Conclusions

IX. Ecological Screening Evaluation

A. Site Characterization

- 1. Description of General Ecology
- 2. Identification of Critical Wildlife Habitats

B. Biological Characterization

- 1. Description of all Potentially Affected Wildlife Habitats
- 2. List of All Special (Threatened/Endangered) Species

C. Pathway Assessment

1. Contamination & Potential Exposure Pathways
 - a. On-Site
 - b. Off-Site
2. Illustration of General Potential Exposure Pathways
 - a. Conceptual Site Model
3. Exposure Pathway Analysis Table (for each habitat)
4. Impacts to Wildlife Habitats or Special Species
 - a. Documented
 - b. Observed
5. Description of Interim Remedial Measures

D. Qualitative Summary

1. Magnitude, Duration & Frequency of Exposure
2. Conclusions Regarding Current or Potential Impacts
3. Qualitative Statement & Rationale (if no impact)

HEALTH AND SAFETY PLAN

The Health and Safety Plan must meet the requirements of CCR Title 8, Section 5192, “Hazardous Waste Operations and Emergency Response.” The health and safety plan should include but not limited to site map, key personnel, responsibilities and qualifications, job hazard analysis, risk assessment summary, exposure monitoring plan, protective equipment, work zones and security measures, decontamination procedures, general safe work practices, standard operating procedures, nearest hospital location and map, contingency plan, training requirements and documentation of the medical surveillance program. The Health and Safety Plan must, at a minimum, include the following elements:

1. OBJECTIVES

Describe the goals and objectives of the Health and Safety Plan (must apply to on-site personnel and visitors). The Health and Safety Plan must be consistent with the facility Contingency Plan, OSHA Regulations, NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985), all state and local regulations.

2. HAZARD ASSESSMENT

List and describe the potentially hazardous substances that could be encountered by field personnel during field activities. Discuss the following:

- Inhalation, Dermal Exposure and Ingestion Hazards
- Physical Hazard and Electrical Hazard
- Overall Hazard Rating

Include a table that, at a minimum, lists: Known Contaminants, Highest Observed Concentration, Media, Symptoms/Effects of Acute Exposure.

3. PERSONAL PROTECTION/MONITORING EQUIPMENT

- For each field task, describe personal protection levels and identify all monitoring equipment.
- Describe any action levels and corresponding response actions (i.e., when will levels of safety be upgraded).
- Describe decontamination procedures and areas.

4. SITE ORGANIZATION AND EMERGENCY CONTACTS

List and identify all contacts (include phone numbers). Identify the nearest hospital and provide a regional map showing the shortest route from the facility to the hospital. Describe site emergency procedures and any site safety organizations. Include evacuation procedures for neighbors (where applicable). Include a facility map showing emergency station locations (first aid, eye wash areas, etc).

PUBLIC PARTICIPATION PLAN

The purpose of Public Participation Program is to ensure that public is well informed, involved early in the process and their issues are heard and considered. Public Participation ensures communications between public and the agency responsible for decision making. It gives the public an opportunity to participate in a process that may impact their lives.

A Community Profile should be prepared as a part of Public Participation Plan. The following items should be included in the Community Profile:

SITE DESCRIPTION

- Description of proposed project.
- Map.
- Description of the site/facility location.
- Description of the surrounding land uses and environmental resources (including proximity to residential housing, schools, churches, etc.).
- Visibility of the site to neighbors.
- Demographics of community in which the site is located (e.g., socioeconomic level, ethnic composition, specific language considerations, etc.). This information may be found in local libraries (e.g., census records).

LOCAL INTEREST

- Contacts with community members - any inquiries from community members, groups, organizations, etc. (include names, phone numbers, and addresses on the key contact list).
- Community interactions - any current meetings, events, presentations, etc.
- Media coverage - any newspaper, magazine, television, etc., coverage.
- Government contacts - city and county staff, state and local elected officials.

KEY CONTACT LIST

- Names, addresses, and phone numbers of city manager, city/county planning department staff, local elected officials, and other community members with whom previous contact has been made.

PAST PUBLIC INVOLVEMENT ACTIVITIES

- Any ad hoc committees, community meetings, workshops, letters, newsletters, etc., about the site or similar activity.

KEY ISSUES AND CONCERNS

- Any specific concerns/issues raised by the community regarding the site/facility or any activities performed on the site/facility.
- Any anticipated concerns/issues regarding the site/facility.
- Any general environmental concerns/issues in the community.

REMEDIAL INVESTIGATION

A Remedial Investigation Workplan is required to completely characterize the nature and extent of the contamination.

A. WORKPLAN PROCEDURAL REQUIREMENTS

The Facility Investigation Workplan (Workplan) shall define, where applicable, the following procedures necessary to:

- Gather all necessary data to determine where interim measures are needed and to support the use of interim measures to address immediate threats to human health and/or the environment, to prevent or minimize the spread of contaminants, to control sources of contamination and to accelerate the corrective action process (required for all releases);
- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any ground water contamination in and around the facility (only required for releases to ground water);
- Characterize the geology and hydrogeology in and around the facility (only required for releases to ground water and possibly for releases to soil);
- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any soil contamination in and around the facility (only required for releases to soil);
- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any soil gas contamination in and around the facility (may be required for releases to ground water and/or soil depending on the circumstances);
- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any surface water contamination (includes surface water sediments) at the facility (only required for releases to surface water);
- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any air releases at the facility (only required for air releases);
- Characterize any potential sources of contamination (required for all releases);
- Characterize the potential pathways of contaminant migration (required for all releases);
- Identify any actual or potential receptors (required for all releases);

- Gather all data to support a risk and/or ecological assessment (if required);
- Gather all necessary data to support the Corrective Measures Study (required for all releases). This could include conducting treatability, pilot, laboratory and/or bench scale studies to assess the effectiveness of a treatment method.

The Workplan shall describe all aspects of the investigation, including project management, sampling and analysis, well drilling and installation and quality assurance and quality control. If the scope of the investigation is such that more than one phase is necessary, the Workplan must include a summary description of each phase. For example, the first phase of a facility investigation could be used to gather information necessary to focus the second phase into key areas of the facility that need further investigation.

B. WORKPLAN FORMAT

The required format for a Workplan is described below:

1. INTRODUCTION

Briefly introduce the Workplan. Discuss the Order or Permit requiring the facility investigation and how the Workplan is organized.

2. INVESTIGATION OBJECTIVES

Investigation objectives include project objectives and data quality objectives.

Project Objectives

Project objectives describe the overall objectives and critical elements of the facility investigation. They state the general information needed from the site (e.g., soil chemistry, hydraulic conductivity of aquifer, stratigraphy, ground water flow direction, identification of potential receptors, etc.). The general information should be consistent with the objectives of the facility investigation and the data needs identified in the Current Conditions Report.

Data Quality Objectives

Provide data quality objectives that identify what data are needed and the intended use of the data.

3. PROJECT MANAGEMENT

Describe how the investigation will be managed, including the following information:

- Organization chart showing key personnel, levels of authority and lines of communication;
- Project Schedule; and
- Estimated Project Budget.

Identify the individuals or positions that are responsible for: project management, field activities, laboratory analysis, database management, overall quality assurance, data

validation, etc. Include a description of qualifications for personnel performing or directing the facility investigation, including contractor personnel.

4. FACILITY BACKGROUND

Summarize existing contamination (e.g., contaminants, concentrations, etc.), local hydrogeologic setting and any other areas of concern at the facility. Include a map showing the general geographic location of the facility and a more detailed facility map showing the areas of contamination. Provide a reference to the Current Conditions Report and/or other applicable documents as a source of additional information.

5. FIELD INVESTIGATION

Task Description

Provide a qualitative description of each investigation task. Example tasks may include, but are not limited to the following:

- Task 1: Surface Soil Sampling
- Task 2: Surface Geophysics, Subsurface Soil Boring, and Borehole Geophysics
- Task 3: Data Gathering to Support Interim Corrective Measures
- Task 4: Monitoring Well Installation
- Task 5: Aquifer Testing
- Task 6: Ground Water Sampling
- Task 7: Potential Receptor Identification
- Task 8: Treatability Studies

Rationale for Sampling

Describe where all samples will be collected (location and depth), types of media that will be sampled and the analytical parameters. Explain the rationale for each sampling point, the total number of sampling points, and any statistical approach used to select these points. The conceptual model of contaminant migration should be considered when selecting sampling locations and depths. If some possible sampling points are excluded, explain why. Describe any field screening techniques that will be used to identify samples for laboratory analysis. Include the rationale for use of field screening techniques and criteria for sample selection.

Background Samples

Background samples should be analyzed for the complete set of parameters for each medium; treat sediments, surface soils and subsurface soils as separate media. Background samples are collected, numbered, packaged, and sealed in the same manner as other samples. For long term and/or especially large projects, it is recommended that 10% of samples collected be from background locations.

Sample Analysis

List and discuss all analyses proposed for the project. Include a table that summarizes the following information for each analysis to be performed:

- Analytical Parameters

- Analytical Method Reference Number (SW 846)
- Sample Preparation and/or Extraction Method Reference Number (SW 846)
- Detection and Practical Quantitation Limits (Data above the detection limit but below the practical quantitation limit must be reported with the estimated concentration.)

Discuss the rationale for selection of the analytical parameters. The rationale must relate to site history and the facility investigation objectives. The achievable detection limits or quantitation limits stated in the selected methods must be adequate for valid comparisons of analytical results against any action levels or standards. For example, the objective may be to collect ground water data for comparison with Maximum Contaminant Levels (MCL's). If this were the case, it would be important to ensure that any ground water test methods had detection limits below the MCL's. Give an explanation if all samples from the same medium will not be analyzed for the same parameters.

Provide the name(s) of the laboratory(s) that will be doing the analytical work. Indicate any special certifications or ratings of the laboratory. Describe the steps that will be taken to select and pre-qualify analytical laboratories to be used including any previous audits and/or other criteria. If a definite laboratory has not yet been selected, list at least three laboratories that are being considered for the analytical work.

Sample Collection Procedures

Describe how sampling points will be selected in the field, and how these locations will be documented and marked for future reference. If a sampling grid will be used, describe the dimensions and lay out planned for the grid.

Outline sequentially or step-by-step the procedure for collecting a sample for each medium and each different sampling technique. Include a description of sampling equipment (including materials of construction), field measurements, sample preservation, housekeeping/cleanliness techniques and well purging procedures. The procedure described must ensure that a representative sample is collected, and that sample handling does not result in cross contamination or unnecessary loss of contaminants. Special care in sample handling for volatile organic samples must be addressed.

Describe how and when duplicates, blanks, laboratory quality control samples and background samples will be collected. If samples will be filtered, describe filtration equipment and procedures.

The report must include sufficient maps and tables to fully describe the sampling effort. This shall include, at a minimum, a map showing all proposed sampling locations and tables that contain the following information:

- Sample Collection Table
Sampling Location/Interval

Analytical Parameters (e.g., volatile organic compounds)
Analytical Method Number
Medium
Preservation Method
Holding Times (as specified in USEPA SW 846)
Containers (quantity, size, type plus footnotes that discuss source and grade of containers)

- Sample Summary Table
 - Sample Description/Area (include QC samples)
 - Analytical Parameters
 - Analytical Method Number
 - Preparation or Extraction Method Number
 - Medium
 - Number of Sample Sites
 - Number of Analyses

- Equipment Decontamination
 - Describe the decontamination procedure for all drilling, sampling equipment (including metal sleeves), and field-parameter testing equipment. The following is a recommended generic procedure for decontamination of sampling equipment:
 - Wash with non-phosphate detergent
 - Tap water rinse
 - 0.1 M nitric acid rinse (when cross contamination from metals is a concern)
 - Deionized/distilled water rinse
 - Pesticide grade solvent rinse (when semi-volatiles and non-volatile organic contamination may be present)
 - Deionized/distilled water rinse (twice)
 - Organic free water rinse (HPLC grade)

The above procedure is not appropriate for every field condition. Clearly document the decontamination procedures.

- Equipment Calibration and Maintenance
 - Logbooks or pre-formatted calibration worksheets should be maintained for major field instruments, to document servicing, maintenance and instrument modification. The calibration, maintenance and operating procedures for all instruments, equipment and sampling tools must be based upon manufacturer's instructions. List all field equipment to be used, specify the maintenance/calibration frequency for each instrument and the calibration procedures (referenced in text and included in appendices).

- Sample Packaging and Shipment

Describe how samples will be packaged and shipped. All applicable Department of Transportation (DOT) regulations must be followed.

- **Sample Documentation**

Discuss the use of all paperwork including field notebooks, record logs, photographs, sample paperwork, and Chain of Custody forms (include a blank copy in Workplan Appendices) and seals.

Describe how sample containers will be labeled and provide an example label if available. At a minimum, each sample container label should include: project ID, sample location, analytical parameters, date sampled and any preservative added to the sample.

A bound field log book must be maintained by the sampling team to provide a daily record of events. Field log books shall provide the means of recording all data regarding sample collection. All documentation in field books must be made in permanent ink. If an error is made, corrections must be made by crossing a line through the error and entering the correct information. Changes must be initiated, no entries shall be obliterated or rendered unreadable. Entries in the log book must include, at a minimum, the following for each day's sampling:

- Date
- Starting Time
- Meteorological Conditions
- Field Personnel Present
- Level of Personal Protection
- Site Identification
- Field Observations/Parameters
- Sample Identification Numbers
- Location and Description of Sampling Points
- Number of Samples Collected
- Time of Sample Collection
- Signature of Person Making the Entry
- Observation of Sample Characteristics
- Photo Log
- Deviations

- **Disposal of Contaminated Materials**

Describe the storage and disposal methods for all contaminated cuttings, well development and purge water, disposable equipment, decontamination water, and any other contaminated materials. The waste material must be disposed of in a manner consistent with local, state and federal regulations.

- **Standard Operating Procedures**

If Standard Operating Procedures (SOPs) are referenced, the relevant procedure must be summarized in the Workplan. The SOP must be specific to the type of tasks proposed and be clearly referenced in the Workplan. The SOP must also be directly applicable, as written, to the Workplan; otherwise, modifications to the SOP must be discussed. Include the full SOP description in the Workplan appendix.

Well Construction and Aquifer Testing

When new monitoring wells (or piezometers) are proposed, describe the drilling method, well design and construction details (e.g., depth of well, screen length, slot size, filter pack material, etc.) and well development procedures. Describe the rationale for proposed well locations and selection of all well design and construction criteria (i.e., provide rationale for selection of slot size and screen length).

When aquifer testing is proposed, describe the testing procedures, flow rates, which wells are involved, test periods, how water levels will be measured, and any other pertinent information.

6. QUALITY ASSURANCE AND QUALITY CONTROL

Quality control checks of field and laboratory sampling and analysis serve two purposes: to document the data quality, and to identify areas of weakness within the measurement process which need correction. Include a summary table of data quality assurance objectives that, at a minimum, lists:

- Analysis Group (e.g., volatile organic compounds)
- Medium
- Practical Quantitation Limits (PQL)
- Spike Recovery Control Limits (%R)
- Duplicate Control Limits +/- (RPD)
- QA Sample Frequency
- Data Validation

A reference may note the specific pages from USEPA's SW 846 Guidance Document that list the test method objectives for precision and accuracy. If the field and laboratory numerical data quality objectives for precision are the same and presented on a single table, then a statement should be made to this effect and added as a footnote to the table (e.g., "These limits apply to both field and laboratory duplicates"). Include a copy of the analytical laboratory quality assurance/quality control plan in the appendices of the Workplan and provide the equations for calculating precision and accuracy.

Field Quality Control Samples

- Field Duplicates
Duplicates are additional samples that must be collected to check for sampling and analytical precision. Duplicate samples for all parameters and media must be collected at a frequency of at least one sample per week or 10 percent of all field samples, whichever is greater.

Duplicates should be collected from points which are known or suspected to be contaminated. For large projects, duplicates should be spread out over the entire site and collected at regular intervals.

Duplicates must be collected, numbered, packaged, and sealed in the same manner as other samples; duplicate samples are assigned separate sample numbers and submitted blind to the laboratory.

- **Blank Samples**

Blanks are samples that must be collected to check for possible cross-contamination during sample collection and shipment and in the laboratory. Blank samples should be analyzed for all parameters being evaluated. At least one blank sample per day must be done for all water and air sampling. Additionally, field blanks are required for soil sampling if non-dedicated field equipment is being used for sample collection.

Blank samples must be prepared using analytically- certified, organic-free (HPLC-grade) water for organic parameters and metal-free (deionized-distilled) water for inorganic parameters. Blanks must be collected, numbered, packaged, and sealed in the same manner as other samples. Blank samples are assigned separate sample numbers and submitted blind to the laboratory. The following types of blank samples may be required:

Equipment Blank: An equipment blank must be collected when sampling equipment (e.g., bladder pump) or a sample collection vessel (e.g., a bailer or beaker) is decontaminated and reused in the field. Use the appropriate "blank" water to rinse the sampling equipment after the equipment has been decontaminated and then collect this water in the proper sample containers.

Field Bottle Blank: This type of blank must be collected when sampling equipment decontamination is not necessary. The field bottle blank is obtained by pouring the appropriate "blank" water into a container at a sampling point.

Laboratory Quality Control Samples

Laboratories routinely perform medium spike and laboratory duplicate analysis on field samples as a quality control check. A minimum of one field sample per week or 1 per 20 samples (including field blanks and duplicates), whichever is greater, must be designated as the "Lab QC Sample" for the medium and laboratory duplicate analysis.

Laboratory quality control samples should be selected from sampling points which are suspected to be moderately contaminated. Label the bottles and all copies of the paperwork as "Lab QC Sample"; the laboratory must know that this sample is for their QC analyses. The first laboratory QC sample of the sampling effort should be part of the first or second day's shipment. Subsequent laboratory QC samples should be spread out over the entire sampling effort.

For water media, 2-3 times the normal sample volume must be collected for the laboratory QC sample. Additional volume is usually not necessary for soil samples.

Performance System Audits

This section should describe any internal performance and/or system audit which the Owner/Operator or RP will conduct to monitor the capability and performance of the project. The extent of the audit program should reflect the data quality needs and intended data uses. Audits are used to quickly identify and correct problems thus preventing and/or reducing costly errors. For example, a performance audit could include monitoring field activities to ensure consistency with the workplan. If the audit strategy has already been addressed in a QA program plan or standard operating procedure, cite the appropriate section which contains the information.

7. DATA MANAGEMENT

Describe how investigation data and results will be evaluated, documented and managed, including development of an analytical database. State the criteria that will be used by the project team to review and determine the quality of data. Document any quality assurance anomalies.

Identify and discuss personnel and data management responsibilities, all field, laboratory and other data to be recorded and maintained, and any statistical methods that may be used to manipulate the data.

8. REFERENCES

Provide a list of references cited in the Workplan.

C. FACILITY INVESTIGATION REPORT

A Facility Investigation Report (Report) must be prepared that describes the entire site investigation and presents the basic results. The Report must clearly present an evaluation of investigation results (e.g., all potential contaminant source areas must be identified, potential migration pathways must be described, and affected media, etc.).

The Report must also include an evaluation of the completeness of the investigation and indicate if additional work is needed. This work could include additional investigation activities and/or interim corrective measures to stabilize contaminant release areas and limit contaminant migration. If additional work is needed, the RP must submit a Phase 2 Workplan and/or Interim Corrective Measures Workplan along with the Report.

At a minimum, the Report must include:

- A summary of investigation results (include tables that summarize analytical results).
- A complete description of the investigation, including all data necessary to understand the project in its entirety including all investigative methods and procedures.

- A discussion of key decision points encountered and resolved during the course of the investigation.
- Graphical displays such as isopleths, potentiometric surface maps, cross-sections, plume contour maps (showing concentration levels, isoconcentration contours), facility maps (showing sample locations, etc.) and regional maps (showing receptor areas, water supply wells, etc.) that describe report results. Highlight important facts such as geologic features that may affect contaminant transport.
- Tables that list all chemistry data for each medium investigated.
- An analysis of current and existing ground water data to illustrate temporal changes for both water chemistry and piezometric data (use graphics whenever possible).
- A description of potential or known impacts on human and environmental receptors from releases at the facility. Depending on the site specific circumstances, this analysis could be based on the results from contaminant dispersion models if field validation is performed.
- A discussion of any upset conditions that occurred during any sampling events or laboratory analysis that may influence the results. The discussion must include any problems with the chain of custody procedures, sample holding times, sample preservation, handling and transport procedures, field equipment calibration and handling, field blank results that show potential sample contamination and any field duplicate results that indicate a potential problem. Summary tables must be provided that show the upset condition and the samples that could be impacted. Laboratory QA/QC must be submitted as part of the Report.
- Assessment of the entire QA/QC program effectiveness.

All raw laboratory and field data (e.g., analytical reports) must be kept at the facility and be made available upon request.

RISK ASSESSMENT

Risk assessment provides evaluation of potential threat to human health and the environment if no removal/remedial action taken. Components of risk assessment are:

- Contaminant Identification
- Environmental Evaluation/Ecological Assessment
- Exposure Assessment
- Toxicity Assessment
- Risk Characterization

Risk assessment must be prepared by a qualified professional with a comprehensive experience in the field. Risk assessments prepared for the SMU, are submitted to the State Office of Environmental Health Hazard Assessment (OEHHA) for review and approval. To be approved, the risk assessment approach shall meet the following criteria:

Evaluate exposure to all chemicals present at the site from all sources at the site.

Evaluate that exposure for all affected and potentially affected human populations, considering all affected media at the site and all pathways appropriate for the site.

The pathways approved by SMU and shall be based on the contaminants present at the site, the media contaminated, fate and transport of the contaminants through the environment, the routes of exposure and the receptors.

The ecological risk assessment shall consider species representing the ecosystems are present or potentially present at the site. It shall consider the fate and transport of the contaminants present at the site, including movement through the food web. Sites with significant ecological impact will be referred to DTSC.

CORRECTIVE MEASURE STUDY/FEASIBILITY STUDY

The purpose of the Corrective Measures Study (CMS)/Feasibility Study (FS) is to identify and evaluate potential remedial alternatives to address contaminant releases from a facility. The scope of work for a Corrective Measure Study is specified below:

A. Corrective Measures Study Workplan

The purpose of the CMS Workplan is to specify how the CMS Report will be prepared. The CMS Workplan shall, at a minimum, include the following elements:

1. A brief project summary.
2. A site-specific description of the overall purpose of the CMS.
3. A description of the proposed media cleanup standards and points of compliance that will be used in the corrective measures study report. Include the justification and supporting rationale for the proposed media cleanup standards and points of compliance. The proposed media cleanup standards must be based on available promulgated federal and state cleanup standards, risk based analysis, data and information gathered during the corrective action process.
4. A description of the specific corrective measure technologies and/or corrective measure alternatives which will be studied.
5. A description of the general approach to investigating and evaluating potential corrective measures.
6. A detailed description of any proposed treatability pilot, laboratory and/or bench scale studies. Proposed studies must be further detailed in either the CMS Workplan or in separate workplans. Submittal times for separate workplans must be included in the CMS Workplan project schedule.

7. A proposed outline for the CMS Report including a description of how information will be presented.
8. A description of overall project management including overall approach, levels of authority (include organization chart), lines of communication, budget and personnel. Include a description of qualifications for personnel directing or performing the work.
9. A project schedule that specifies all significant steps in the process and when key documents.

B. Corrective Measures Study Report

The CMS Report shall, at a minimum, include the following elements:

1. **Introduction/Purpose**
Describe the purpose and intent of the document.
2. **Description of Current Conditions**
A brief discussion of any new information that has been developed. This discussion should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measure alternative(s).
3. **Proposed Media Cleanup Standards**
Describe and justify the proposed media cleanup standards.
4. **Identification and Screening of Corrective Measure Technologies**
 - a. Identification
List and briefly describe potentially applicable technologies for each affected media that may be used to achieve the media cleanup standards.
 - b. Screening
Technologies must be screened to eliminate those that may prove unfeasible to implement given the existing set of waste and site-specific conditions. The screening is accomplished by evaluating technology limitations (e.g., for volume, area, contaminant concentrations, interferences, etc.) and using contaminant and site characterization information.
5. **Corrective Measure Alternative Development**
Assemble the technologies that pass the screening step into specific alternatives that have potential to meet the corrective action objectives. Options for addressing less complex sites could be relatively straightforward and may only require evaluation of a single or limited number of alternatives.

Each alternative may consist of an individual technology or a combination of technologies used in sequence (e.g., treatment train). Depending on the site specific situation, different alternatives may be considered for separate areas of the facility. List and briefly describe each corrective measure alternative.

6. **Evaluation of Corrective Measure Alternatives**

The four **Corrective Action Standards** and five **Remedy Selection Decision Factors** described below shall be used to evaluate the corrective measure alternatives. All alternatives must meet the corrective action standards before the remedy selection decision factors are used for further evaluation.

Corrective Action Standards

1. Be Protective of Human Health and the Environment
Describe in detail how each corrective measure alternative is protective of human health and the environment.
2. Attain Media Cleanup Standards
Describe in detail each corrective measure alternatives ability to meet the proposed media cleanup standards.
3. Control the Sources of Releases
Describe in detail each corrective measure alternatives ability to control the sources of releases.
4. Comply With Any Applicable Standards for Management of Wastes
Discuss how any specific waste management activities will be conducted in compliance with all applicable state or federal regulations.

Remedy Selection Decision Factors

1. Short- and Long-Term Effectiveness
Each corrective measure alternative must be evaluated with regard to its effectiveness in protecting human health and the environment and meeting the proposed media cleanup standards. Both short- and long-term components of effectiveness must be evaluated; short-term referring to the construction and implementation period, and long-term referring to the period after the remedial action is complete. Estimate approximately how much time it will take to implement each corrective measure alternative, the length of time before initial beneficial results are obtained, and the length of time required to achieve the proposed media cleanup standards.

The evaluation of short-term effectiveness must include possible threats to the safety of nearby communities, workers, and environmentally sensitive areas (e.g., oceans, wetlands) during construction of the corrective measure alternative. Factors to consider are fire, explosion, exposure to hazardous substances and potential threats associated with treatment,

excavation, transportation and re-disposal or containment of waste material. Laboratory and/or field studies are extremely useful in estimating the effectiveness of corrective measures and should be used whenever possible.

The evaluation of long-term effectiveness must include possible threats to the safety of nearby community's workers, and environmentally sensitive areas (e.g., oceans, wetlands) during operation of the corrective measure alternative.

2. Reduction of Toxicity, Mobility and/or Volume

Each corrective measure alternative must be evaluated for its ability to reduce the toxicity, mobility, and/or volume of the contaminated media. Reduction in toxicity, mobility, and/or volume refers to changes in one or more characteristics of the contaminated media by the use of corrective measures that decrease the inherent threats associated with the media.

Estimate how much the corrective measure alternative will reduce the waste toxicity, volume and/or mobility (compare initial site conditions to post-corrective measure conditions).

3. Long-Term Reliability

Each corrective measure alternative must be evaluated with regards to its long-term reliability. This evaluation includes consideration of operation and maintenance requirements.

Demonstrated and expected reliability is a way of assessing the risk and effect of failure. Discuss whether the technology or combination of technologies have been used effectively together under analogous site conditions, whether failure of any one technology in the alternative has an impact on receptors or contaminant migration, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site (e.g., heavy rain storms, earthquakes, etc).

Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements must also be considered.

Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure alternative shall be evaluated in terms of the projected useful life of the overall alternative and

of its component technologies. Useful life is defined as the length of time the necessary or required level of effectiveness can be maintained.

4. Implementability of Corrective Measure Alternatives

The implementability criterion addresses the technical and administrative feasibility of implementing a corrective measure alternative and the availability of various services and materials needed during implementation. Each corrective measure alternative must be evaluated using the following criteria:

Construction and Operation: Corrective measure alternatives must be feasible to implement given the existing set of waste and site-specific conditions. This evaluation was initially done for specific technologies during the screening process and is addressed again in this detailed analysis of the alternative as a whole. It is not intended that the screening process be repeated here, but instead to highlight key differences and/or changes from the screening analysis that may result from combining technologies.

Administrative Feasibility: Discuss the administrative activities needed to implement the corrective measure alternative (e.g., permits, public acceptance, rights of way, off-site approvals, etc.).

Availability of Services and Materials: Discuss the availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials, and the availability of prospective technologies for each corrective measure alternative.

5. Cost

Develop a preliminary cost estimate for each corrective measure alternative (and for each phase or segment of the alternative).

- The preliminary capital cost estimate must consider all key costs including, at a minimum, costs for engineering, mobilization, demobilization, site preparation, construction, materials, labor, equipment purchase and rental, sampling, analysis, waste disposal, permitting and health and safety measures.
- The preliminary operation and maintenance cost estimate must consider all key costs including, at a minimum, costs for labor, training, sampling, analysis, maintenance materials, utilities, waste disposal, waste treatment, permitting and health and safety measures.

- Calculate the net present value of preliminary capital and operation and maintenance costs for each corrective measure alternative.

7. **Owner/Operator or Respondent's Recommended Corrective Measure Alternative**

The Owner/Operator or Respondent may recommend a preferred corrective measure alternative. Such a recommendation should include a description and supporting rationale for the preferred alternative that is consistent with the corrective action standards and remedy selection decision factors discussed above.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The basic goal of the California Environmental Quality Act (CEQA) is to develop and maintain a high-quality environment now and in the future, while the specific goals of CEQA are for California's public agencies to: 1) identify the significant environmental effects of their actions; and, either 2) avoid those significant environmental effects, where feasible; or 3) mitigate those significant environmental effects, where feasible.

CEQA applies to "projects" proposed to be undertaken or requiring approval by State and local government agencies. "Projects" are activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, CEQA requires one of these public agencies to serve as the "lead agency." A lead agency must complete the environmental review process required by CEQA. The most basic steps of the environmental review process are:

- Determine if the activity is a "project" subject to CEQA;
- Determine if the "project" is exempt from CEQA;
- Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant"

Based on its findings of "significance", the lead agency prepares one of the following environmental review documents:

- Negative Declaration if it finds no "significant" impacts;
- Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
- Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", the State CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects. The purpose of an EIR is to provide State and local agencies and the general public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to list ways which the significant environmental effects may be minimized and indicate alternatives to the project.

CEQA EXEMPTIONS

The lead agency determines if a project is exempt from CEQA. Therefore, if it is determined that a proposed activity may be a “project” subject to CEQA, then, potential exemptions to CEQA should be evaluated. Projects could be exempt from CEQA if they are ministerial, have no possible significant effects, are statutorily exempt, or are categorically exempt. These four types of exemptions are further defined as follows:

- Ministerial – A project is ministerial if it involves little or no personal judgment by the public official as to the wisdom or manner of carrying out the project.
- No Possible Significant Effects – A project is exempt from CEQA if it can be seen with certainty that there is no possibility of a significant effect.
- Statutory Exemption – Statutory exemptions describe types of projects which the California Legislature has decided are not subject to CEQA procedures and policies. A comprehensive source of statutory exemptions is found in Section 15282 of Article 18 of the CEQA Guidelines.
- Categorical Exemption – Categorical exemptions are descriptions of types of projects which the Secretary of the Resources Agency has determined do not have a significant effect on the environment. Categorical exemptions are found in Article 19 of the CEQA Guidelines. Unlike statutory exemptions, categorical exemptions are not absolute. There are exceptions to the exemptions depending on the nature or location of the project.

If the lead agency determines that the activity is not a project subject to CEQA or determines that the project is ministerial, then, no further action is required under CEQA. If the project is statutorily exempt, categorically exempt or has no possible significant effect, then, the lead agency or the public agency approving the project may file a Notice of Exemption (NOE). A sample Notice of Exemption is presented in Appendix XX.

INITIAL STUDY

If the project is not exempt from CEQA, then, the lead agency must prepare an Initial Study to:

- Determine whether the project may have a significant effect on the environment (i.e. whether an Environmental Impact Report [EIR] or negative declaration should be prepared).
- Identify measures that mitigate project impacts to a less than significant level (mitigated negative declaration).
- Define the scope of the EIR.
- Justify lead agency's decision to adopt a negative declaration.
- Determine whether to rely on a previously prepared EIR.

The Initial Study must include:

- Project description
- Environmental setting
- Potential environmental impacts and brief explanations to support findings
- Mitigation measures for any significant effects
- Consistency with plans and policies

- Names of parties responsible for preparation

NEGATIVE DECLARATION OR ENVIRONMENTAL IMPACT REPORT

A Negative Declaration is a document that states upon completion of an initial study, that there is no substantial evidence that the project may have a significant effect on the environment. A Negative Declaration can be prepared only when there is no substantial evidence in light of the whole record before the lead agency that the project may have a significant effect on the environment. An EIR must be prepared when there is substantial evidence in the record that supports a fair argument that significant effects may occur. An EIR is an informational document which will inform the public agency decision-makers and the public generally of:

- The significant environmental effects of a project
- Possible ways to minimize significant effects
- Reasonable alternatives to the project

Preparation of EIRs and Negative Declarations must be prepared in coordination with the planning, review, and approval processes of each agency involved. Authority to approve or disapprove a project is based on the underlying state statutes and enabling regulations going to the issuance of the permit for the project. A lead agency may disapprove a project if necessary in order to avoid significant environmental effects.

NOTICE OF DETERMINATION

A Notice of Determination (NOD) is a brief notice to be filed by a lead agency after it approves or determines to carry out a project subject to the requirements of CEQA for which an EIR or negative declaration has been prepared. The NOD is to include:

- Name, locations, and brief description of the project.
- Date of approval.
- Local lead agency's conclusion on whether project as approved will have significant effects on the environment.
- Findings regarding mitigation of significant environmental impacts, any statement of overriding considerations adopted, and any mitigation measures adopted upon which project approval is conditioned.
- Statement that EIR or negative declaration was prepared and certified or adopted pursuant to CEQA.
- Location where final EIR or negative declaration and record of project approval are available for review.

Notice of Exemption

To: Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

From: (Public Agency) _____

County Clerk
County of _____

Project Title: _____

Project Location- Specific: _____

Project Location -City: _____ Project Location -County _____

Description of Nature, Purpose, and Beneficiaries of Project:

Name of Public Agency Approving Project: _____

Name of Person or Agency Carrying Out Project: _____

Exempt Status: (Check one)

- Ministerial (Sec. 21080(b)(1);15268):
- Declared Emergency (Sec. 21080(b)(3); 15269(a));
- Emergency Project (sec. 21080(b)(4); 15269(b)(c);
- Categorical Exemptions. State type and section number:
- Statutory Exemptions. State code number:

Reasons why project is exempt: _____

Lead Agency

Contact Person: _____ Area Code/Telephone/Extension: _____

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes No

Signature: _____ Date: _____ Title: _____

- Signed by Lead Agency
- Signed by Applicant

Date received for filing at OPT:

REMEDIAL ACTION PLAN /CORRECTIVE MEASURE(S)

The purpose of the Remedial Action Plan (RAP) is to design, construct, operate, maintain and monitor the performance of the selected remedy. RAPs are intended to protect human health and/or the environment from prior hazardous waste releases. RAP should clearly describes the size, shape, form, and content of the proposed corrective measure(s) and the key components that are needed to implement. RAP must be approved by SMU prior to implementation and at a minimum include the following:

- **Introduction/Purpose**

Describe the purpose of the RAP/Corrective Measure(s) and provide a site summary background, summary of remedial investigation, summary of corrective measures.

- **Cleanup Standards**

Discuss the cleanup standards for the facility. Discuss the process of cleanup levels selection.

- **Conceptual Model of Contaminant Migration**

It is important to know where the contaminants are and to understand how they are moving before an adequate corrective measure can be developed. To address this critical question, a conceptual model of the site and contaminant migration should be presented. The conceptual model consists of a working hypothesis of how the contaminants may move from the release source to the receptor population. The conceptual model is developed by looking at the applicable physical parameters (e.g., water solubility, density, Henry's Law Constant, etc.) for each contaminant and assessing how the contaminant may migrate given the existing site conditions (geologic features, depth to ground water, etc.). It must describe the phase (water, soil, gas, non-aqueous) and location where contaminants are likely to be found.

- **Description of Corrective Measure**

Considering the conceptual model of contaminant migration, qualitatively describe what the corrective measure is supposed to do and how it will function at the Facility. Discuss the implementation of the corrective measure and its ability to meet the objectives.

- **Data Sufficiency**

Establish whether or not there are sufficient and accurate data are available for this purpose. The assessment findings must be summarized and the data adequacy justified.

- **Project Management**

Identify levels of authority and responsibility (include organization chart), lines of communication and qualifications of key personnel who will direct the corrective measure design and implementation.

- **Project Schedule**

The project schedule must specify all significant steps in the process.

- **Design Criteria**

Specify performance requirements for the project overall and for each major component. The selected equipment must meet the performance requirements.

- **Waste Management Practices**

Describe the wastes generated and how they will be managed. Also discuss drainage and rainwater runoff management.

- **Required Permits**

List and describe the permits needed to implement the project.

CLOSURE

Following implementation and satisfactory completion of RAP/Corrective Measure a Site Closure/No Further Action Letter is issued. If deed restriction is required, it should be recorded prior to the site closure. One or all of the following is required if land use restriction is proposed:

(A) SMU shall notify the local land use planning authority in which any site is located that corrective action has been proposed. SMU shall provide the local land use planning authority with notice of the time, date, and place of all public meetings regarding the corrective action and shall involve the local land use planning authority in any deliberation concerning land use conditions or actions. SMU shall request the local land use planning authority to provide the SMU with the local land use planning authority's assessment of the planned use of the site, including the current and future zoning and general plan designations for the site and the local land use planning authority's determination regarding the appropriate planned use designation in the corrective action plan prepared for the site.

(B) Any land use condition shall be executed by the owner of the land, shall run with the land, and is binding upon all of the owners of the land, their heirs, successors and assignees, and their agents, employees or lessees. All executed land use conditions shall be recorded by the site owner in the county in which the site is located within ten days of execution. The site owner shall provide SMUA with a copy of the land use conditions, which have been appropriately recorded.

(C) If a corrective action plan requires the use of a land use control, SMU shall not certify that the corrective action is complete until SMU receives a certified copy of the recorded land use control.

If an Operation and Maintenance (O&M) plan is needed, it must be provided and approved prior to issuance of a Closure Letter.

OPERATION AND MAINTENANCE PLAN

Operation and Maintenance (O&M) Plan are used when a site's final RAP and Remedial Design require long-term O&M. O&M must be in place prior to issuing Closure Letter. O&M Plan must include a strategy and procedures for performing operations, long term maintenance, and monitoring of the corrective measure. The O&M plan, at a minimum must include:

1. Introduction/Purpose

Describe the purpose of the document and provide project summary description.

2. Project Management

Describe the management approach including levels of authority and responsibility (include organization chart), lines of communication and the qualifications of key personnel who will operate and maintain the corrective measure (including contractor personnel);

3. System Description

Describe the O&M system operation.

4. Personnel Training

Describe the training process for O&M personnel. Include in the technical specifications governing treatment systems, contractor requirements for providing appropriate service visits by experienced personnel to supervise the installation, adjustment, start up and operation of the treatment systems, and training covering appropriate operational procedures once the start-up has been successfully accomplished.

5. Start-Up Procedures

Describe system start-up procedures including and operational testing.

6. Operation and Maintenance Procedures

Describe normal operation and maintenance procedures including:

- Description of Tasks for Operation;
- Description of Tasks for Maintenance;
- Description of Prescribed Treatment or Operation Conditions; and
- Schedule Showing Frequency of Each O&M Task.

7. Replacement schedule for equipment and its components.

8. Waste Management Practices

Describe the wastes generated by operation of the corrective measure and how they will be managed. Also discuss drainage and rainwater runoff management.

9. Sampling and Monitoring

Sampling and monitoring activities may be needed for effective operation and maintenance of the corrective measure. If sampling activities are necessary, the O&M plan must include a complete sampling and analysis section which specifies at a minimum the following information:

- Description and Purpose of Monitoring Tasks.
- Data Quality Objectives.
- Analytical Test Methods and Detection Limits.
- Name of Analytical Laboratory.
- Laboratory QA/QC.
- Sample Collection Procedures and Equipment.
- Field Quality Control Procedures:
 - Duplicates (10% of all field samples).
 - Blanks (field, equipment, etc.).
 - Equipment Calibration and Maintenance.
 - Equipment Decontamination.
 - Sample Containers.
 - Sample Preservation.
 - Sample Holding Times (must be specified).
 - Sample Packaging and Shipment.
 - Sample Documentation (field notebooks, sample labeling, etc).
 - Chain of Custody.
- Criteria for Data Acceptance and Rejection.
- Schedule of monitoring frequency.

All Cal-EPA and USEPA guidance for sampling and analysis must be followed.

10. Corrective Measure Completion Criteria

Describe the process and criteria (e.g., ground water cleanup goal met at all compliance points for one year) for determining when corrective measure may cease. Also describe the process and criteria for determining when maintenance and monitoring may cease. Following completion of O&M a completion report must be submitted.

11. O&M Contingency Procedures

- Procedures to address system breakdowns and operational problems including a list of redundant and emergency back-up equipment and procedures.
- Should the corrective measure suffer complete failure, specify alternate procedures to prevent release or threatened releases of hazardous

substances, pollutants or contaminants which may endanger public health and/or the environment or exceed cleanup standards.

- The O&M Plan must specify that, in the event of a major breakdown and/or complete failure of the corrective measure (includes emergency situations), the Owner/Operator or RP will orally notify SMU within 24 hours of the event and in writing within 72 hours of the event. The written notification must, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on human health and/or the environment.
- Procedures to be implemented in the event that the corrective measure is experiencing major operational problems, is not performing to design specifications and/or will not achieve the cleanup goals in the expected timeframe. For example, in certain circumstances both a primary and secondary corrective measure may be selected for the Facility. If the primary corrective measure were to fail, then the secondary would be implemented. This section would thus specify that if the primary corrective measure failed, then design plans would be developed for the secondary measure.

11. Data Management and Documentation Requirements

Describe how analytical data and results will be evaluated, documented and managed, including development of an analytical database. State the criteria that will be used to review and determine the quality of data. The O&M Plan shall specify that the following information will be collected and maintained:

- Progress Report Information
 - a. Work Accomplishments (e.g., performance levels achieved, hours of treatment operation, treated and/or excavated volumes, concentration of contaminants in treated and/or excavated volumes, nature and volume of wastes generated, etc.).
 - b. Record of significant activities (e.g., sampling events, inspections, problems encountered, action taken to rectify problems, etc.).
- Monitoring and laboratory data;
- Records of operating costs; and
- Personnel, maintenance and inspection records. These data and information should be used to prepare Progress Reports and the Corrective Measure Completion Report.

REFERENCE LIST

- Preliminary Endangerment Assessment Guidance Manual
- RWQCB Interim Site Assessment and Cleanup Guide Book
- Advisory - Active Soil Gas Investigations
- Interim Final - Guidance for the Evaluation and Migration of Subsurface Vapor Intrusion to Indoor Air.
- Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties
- Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846
- Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA” (USEPA)
- DTSC Site Specific Health and Safety Plan Guidance Document
- Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities”(Department of Health and Human Services-NIOSH
- Superfund Exposure Assessment Manual (USEPA)
- Methodology for Characterization of Uncertainty in Exposure Assessment (USEPA)
- Chemical, Physical, and Biological properties of compounds present at Hazardous Waste Sites (USEPA)
- Community Relations in Superfund-A Handbook (USEPA)
- Ecological Assessment of Hazardous Waste Sites (USEPA)
- Technical Guidance for Hazard Analysis (USEPA)
- RCRA Groundwater Monitoring Technical Enforcement Document (USEPA)
- Protection of Water Supplies from Groundwater Contamination (USEPA)
- Handbook on In-Situ Treatment of Hazardous Waste Contaminated Soils (USEPA)

- DTSC Public Participation Manual
- California Environmental Quality Act – State Office of Planning and Research
- California Environmental Quality Act – Title 14
- DTSC California Environmental Quality Act Guidelines and Policies
- DTSC Scope of Work for Corrective Measure Implementation
- DTSC Removal Action Workplan Sample
- EPA Screening Levels for Chemical Contaminants