

DISAPPROVED BY OAL
SEPTEMBER 1993

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 92-49

POLICIES AND PROCEDURES FOR INVESTIGATION AND
CLEANUP AND ABATEMENT OF DISCHARGES
UNDER WATER CODE SECTION 13304

WHEREAS:

1. California Water Code (WC) Section 13001 provides that it is the intent of the Legislature that the State Water Resources Control Board (State Water Board) and each Regional Water Quality Control Board (Regional Water Board) shall be the principal state agencies with primary responsibility for the coordination and control of water quality. The State and Regional Water Boards shall conform to and implement the policies of the Porter-Cologne Water Quality Control Act (Division 7, commencing with WC Section 13000) and shall coordinate their respective activities so as to achieve a unified and effective water quality control program in the state;
2. WC Section 13140 provides that the State Water Board shall formulate and adopt State Policy for Water Quality Control;
3. WC Section 13240 provides that Water Quality Control Plans shall conform to any State Policy for Water Quality Control;
4. WC Section 13304 requires that any person who has discharged or discharges waste into waters of the state in violation of any waste discharge requirement or other order or prohibition issued by a Regional Water Board or the State Water Board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance may be required to cleanup the discharge and abate the effects thereof. This section authorizes Regional Water Boards to require complete cleanup of all waste discharged and restoration of affected water to background conditions (i.e., the water quality that existed before the discharge). The term waste discharge requirements includes those which implement the National Pollutant Discharge and Elimination System Program;
5. WC Section 13307 provides that, on or before July 1, 1992, the State Water Board shall establish policies and procedures that its representatives and the representatives of the Regional Water Boards shall follow for the oversight of investigations and cleanup and abatement activities resulting from discharges of hazardous substances, including:
 - a. The procedures the State Water Board and the Regional Water Boards will follow in making decisions as to when a person may be required to undertake an investigation to determine if an unauthorized hazardous substance discharge has occurred;

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- b. Policies for carrying out a phased, step-by-step investigation to determine the nature and extent of possible soil and ground water contamination or pollution at a site;
 - c. Procedures for identifying and utilizing the most cost-effective methods for detecting contamination or pollution and cleaning up or abating the effects of contamination or pollution;
 - d. Policies for determining reasonable schedules for investigation and cleanup, abatement, or other remedial action at a site. The policies shall recognize the danger to public health and the waters of the state posed by an unauthorized discharge and the need to mitigate those dangers while at the same time taking into account, to the extent possible, the resources, both financial and technical, available to the person responsible for the discharge;
- 6. "Waters of the state" include both ground water and surface water;
 - 7. Regardless of the type of discharge, procedures and policies applicable to investigations, cleanup, and abatement activities are similar. It is in the best interest of the people of the state for the State Water Board to provide consistent guidance for Regional Water Boards to apply to investigation, cleanup, and abatement;
 - 8. WC Section 13260 requires any person discharging or proposing to discharge waste that could affect waters of the state, or proposing to change the character, location, or volume of a discharge to file a report with and receive requirements from the Regional Water Board;
 - 9. WC Section 13267 provides that the Regional Water Board may require dischargers subject to waste discharge requirements to furnish those technical or monitoring reports as the Regional Water Board may specify, provided that the burden, including costs, of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports;
 - 10. WC Section 13300 states that the Regional Water Board may require a discharger to submit a time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements prescribed by the Regional Water Board or the State Water Board;
 - 11. California Health and Safety Code (HSC) Section 25356.1 requires the Department of Toxic Substances Control (DTSC) or, if appropriate, the Regional Water Board to prepare or approve remedial action plans for sites where hazardous substances were released to the environment if the sites have been listed pursuant to HSC Section 25356 (state "Superfund" priority list for cleanup of sites);
 - 12. Coordination with the U.S. Environmental Protection Agency (USEPA), state agencies within the California Environmental Protection Agency (Cal/EPA) (e.g., DTSC, Air Resources Control Board), air pollution

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control districts, local environmental health agencies, and other responsible federal, state, and local agencies: (1) promotes effective protection of water quality, human health, and the environment and (2) is in the best interest of the people of the state. The principles of coordination are embodied in many statutes, regulations, and interagency memoranda of understanding (MOU) or agreement which affect the State and Regional Boards and these agencies;

13. Under Executive Order D-55-86, DTSC and State Water Board entered into an MOU dated August 1, 1990 which specifies each agency's responsibilities in hazardous waste site cleanup;
14. In order to clean up and abate the effects of a discharge or threat of a discharge, a discharger may be required to perform an investigation to define the nature and extent of the discharge or threatened discharge and to develop appropriate cleanup and abatement measures;
15. Investigations that were not properly planned have resulted in increases in overall costs and, in some cases, environmental damage. Overall costs have increased when original corrective actions were later found to have had no positive effect or to have exacerbated the pollution. Environmental damage may increase when a poorly conceived investigation or cleanup and abatement program allows pollutants to spread to previously unaffected waters of the state;
16. A phased approach to site investigation should facilitate adequate delineation of the nature and extent of the pollution, and may reduce overall costs and environmental damage, because: (1) investigations inherently build on information previously gained; (2) often data are dependent on seasonal and other temporal variations; and (3) adverse consequences of greater cost or increased environmental damage can result from improperly planned investigations and the lack of consultation and coordination with the Regional Water Board. However, there are circumstances under which a phased, iterative approach may not be necessary to protect water quality, and there are other circumstances under which phases may need to be compressed or combined to expedite cleanup and abatement;
17. Preparation of written workplans prior to initiation of significant elements or phases of investigation, cleanup, and abatement generally saves Regional Water Board and discharger resources. Results are superior, and the overall cost-effectiveness is enhanced;
18. Discharger reliance on qualified professionals promotes proper planning, implementation, and long-term cost-effectiveness of investigation, cleanup, and abatement activities. Professionals should be qualified, licensed where applicable, and competent and proficient in the fields pertinent to the required activities. California Business and Professions Code Sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations and judgements be performed by or under the direction of registered professionals;

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19. WC Section 13360 prohibits the Regional Water Boards from specifying, but not from suggesting, methods that a discharger may use to achieve compliance with requirements or orders. It is the responsibility of the discharger to propose methods for Regional Water Board review and concurrence to achieve compliance with requirements or orders;
20. The USEPA, California state agencies, the American Society for Testing and Materials, and similar organizations have developed or identified methods successful in particular applications. Reliance on established, appropriate methods can reduce costs of investigation, cleanup, and abatement;
21. The basis for Regional Water Board decisions regarding investigation, cleanup, and abatement includes: (1) site-specific characteristics; (2) applicable state and federal statutes and regulations; (3) applicable water quality control plans adopted by the State Water Board and Regional Water Boards, including beneficial uses, water quality objectives, and implementation plans; (4) State Water Board and Regional Water Board policies, including State Water Board Resolutions 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California) and 88-63 (Sources of Drinking Water); and (5) relevant standards, criteria, and advisories adopted by other state and federal agencies;
22. State Water Board regulations governing discharges of waste to land (California Code of Regulations (CCR), Title 23, Division 3, Chapter 15), require that cleanup and abatement actions intended to contain wastes at the place of release are to implement the applicable provisions of that Chapter, to the extent feasible (23 CCR 2511(d)). Also Article 5 of that Chapter prescribes a methodology for establishing cleanup standards (23 CCR 2550.4) and undertaking corrective actions where discharges to a waste management unit have resulted in discharges subject to WC Section 13304;
23. State Water Board regulations governing site investigation and corrective action at underground storage tank unauthorized release sites are found in 23 CCR Division 3, Chapter 16, in particular Article 11 commencing with Section 2720;
24. It is the responsibility of the Regional Water Board to make decisions regarding cleanup and abatement goals and objectives for the protection of water quality and the beneficial uses of waters of the state within each Region;
25. Investigations and cleanup and abatement activities usually contain five basic elements:
 - a. Preliminary site assessment (to confirm the discharge and the identity of the dischargers; to identify affected or threatened waters of the state and their beneficial uses; and to develop preliminary information on the nature, and vertical and horizontal extent, of the discharge);

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- b. Soil and water investigation (to determine the source, nature and extent of the discharge with sufficient detail to provide the basis for decisions regarding subsequent cleanup and abatement actions, if any are determined by the Regional Water Board to be necessary);
 - c. Proposal and selection of cleanup action (to evaluate feasible and effective cleanup and abatement actions, and to develop preferred cleanup and abatement alternatives);
 - d. Implementation of cleanup action (to implement the selected alternative, and to monitor in order to verify progress);
 - e. Monitoring (to confirm short- and long-term effectiveness of cleanup and abatement);
26. Cleanup and abatement alternatives that entail discharge of residual wastes to waters of the state, discharges to regulated waste management units, or leaving wastes in place, create additional regulatory constraints and long-term liability, which must be considered in any evaluation of cost-effectiveness;
27. Regional Water Boards may impose more stringent requirements as needed to protect water quality and to reflect regional and site-specific conditions.

THEREFORE BE IT RESOLVED:

These policies and procedures apply to all investigations and cleanup and abatement activities of all types of discharges subject to Section 13304 of the Water Code.

- I. The Regional Water Board shall implement the following procedures in making decisions as to when a person may be required to undertake an investigation related to a discharge or threat of a discharge subject to WC Section 13304. The Regional Water Board shall:
- A. Use any relevant evidence, whether direct or circumstantial, in order to establish the existence of a discharge or threatened discharge or the source of a discharge. Any such determination must be supported by substantial evidence. There must be sufficient evidence to support the action of the Regional Water Board. Sources of evidence may include, but are not limited to, the following:
 - 1. Documentation of historical or current activities, waste characteristics, chemical use, storage or disposal information, as documented by public records, responses to questionnaires, or other sources of information;
 - 2. Site characteristics and location in relation to other potential sources of a discharge;

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3. Hydrologic and hydrogeologic information, such as differences in upgradient and downgradient water quality;
 4. Industry-wide operational practices that have historically led to discharges, such as leakage of pollutants from wastewater collection and conveyance systems, sumps, storage tanks, landfills, and clarifiers;
 5. Evidence of poor management of materials or wastes, such as improper storage practices or inability to reconcile inventories;
 6. In conjunction with other evidence, lack of documentation of responsible management of materials or wastes, such as lack of manifests or lack of documentation of proper disposal;
 7. Physical evidence, such as analytical data, soil or pavement staining, distressed vegetation, or unusual odor or appearance;
 8. Reports and complaints;
 9. Other agencies' records of possible or known discharge; and
 10. In conjunction with other evidence, refusal or failure to respond to Regional Water Board inquiries;
- B. Make a reasonable effort to identify the dischargers associated with the discharge. It is not necessary to identify all dischargers for the Regional Water Board to proceed with requirements for a discharger to investigate and cleanup;
 - C. Require one or more persons identified as a discharger associated with a discharge or threatened discharge subject to WC Section 13304 to undertake an investigation, based on findings of IA and IB above;
 - D. Notify appropriate federal, state, and local agencies regarding discharges subject to WC Section 13304 and coordinate with these agencies on investigation, cleanup, and abatement activities.
- II. The Regional Water Board shall apply the following policies in overseeing: (a) investigations to determine the nature and horizontal and vertical extent of a discharge and (b) appropriate cleanup and abatement measures.
- A. The Regional Water Board shall:
 1. Routinely require the discharger to conduct a phased, step-by-step investigation and cleanup. However, certain circumstances may require a flexible application of this approach, for example:

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- a. Emergency situations involving acute pollution or contamination affecting present uses of waters of the state;
- b. Imminent threat of pollution;
- c. Protracted investigations resulting in unreasonable delay of cleanup and abatement; or
- d. Discharges of limited extent which can be effectively investigated and cleaned up within a short time;

Any or all elements of phased investigation may proceed concurrently, rather than sequentially, in order to expedite cleanup and abatement of a discharge, provided that overall cleanup goals and objectives are not compromised. For example, interim cleanup and abatement actions, such as source removal, may begin before investigations are complete;

2. Require the discharger to extend the investigation and cleanup and abatement to any location affected by the discharge or threatened discharge. The Regional Water Board has the authority to require uncooperative landowners and tenants of property affected by the discharge to cooperate or, if necessary, to participate in investigation, cleanup, and abatement;
3. Require the discharger to submit written workplans for elements and phases of the investigation, cleanup, and abatement, whenever practicable;
4. Review and concur with adequate workplans prior to initiation of investigations, to the extent practicable. The Regional Water Board may give verbal concurrence for investigations to proceed, with written follow-up. An adequate workplan should include or reference, at least, a comprehensive description of proposed investigative, cleanup, and abatement activities, a sampling and analysis plan, a quality assurance project plan, a health and safety plan, and a commitment to implement the workplan;
5. Require the discharger to submit reports on results of all phases of investigations and cleanup and abatement actions, regardless of degree of oversight by the Regional Water Board;
6. Require the discharger to provide documentation that plans and reports are prepared by professionals qualified to prepare such reports, and that each component of investigative and cleanup and abatement actions is conducted under the direction of appropriately qualified professionals.

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A statement of qualifications of the responsible lead professionals shall be included in all plans and reports submitted by the discharger;

7. Prescribe cleanup levels which are consistent with appropriate levels set by the Regional Water Board for analogous discharges that involve similar wastes, site characteristics, and water quality considerations;

- B. The Regional Water Board may identify investigative and cleanup and abatement activities that the discharger could undertake without Regional Water Board oversight, provided that these investigations and cleanup and abatement activities shall be consistent with the policies and procedures established herein;

III. The Regional Water Board shall implement the following procedures to ensure that dischargers shall have the opportunity to select cost-effective methods for detecting discharges or threatened discharges and methods for cleaning up or abating the effects thereof. The Regional Water Board shall:

- A. Concur with any investigative and cleanup and abatement proposal which the discharger demonstrates and the Regional Board finds to have a substantial likelihood to achieve compliance, within a reasonable time frame, with cleanup goals and objectives that implement the applicable Water Quality Control Plans and Policies adopted by the State Water Board and Regional Water Boards, and which implement permanent cleanup and abatement solutions which do not require ongoing maintenance, wherever feasible;
- B. Consider whether the burden, including costs, of reports required of the discharger during the investigation and cleanup and abatement of a discharge bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports;
- C. Require the discharger to consider the effectiveness, feasibility, and relative costs of applicable alternative methods for investigation, cleanup, and abatement. Such comparison may rely on previous analysis of analogous sites, and shall include supporting rationale for the selected methods;
- D. Ensure that the discharger is aware of and considers techniques which provide a cost-effective basis for initial assessment of a discharge.
 1. The following techniques may be applicable:
 - a. Use of available current and historical photographs and site records to focus investigative activities on locations and wastes or materials handled at the site;
 - b. Soil gas surveys;

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- c. Shallow geophysical surveys;
- d. Remote sensing techniques;
- 2. The above techniques are in addition to the standard site assessment techniques, which include:
 - a. Inventory and sampling and analysis of materials or wastes;
 - b. Sampling and analysis of surface water;
 - c. Sampling and analysis of sediment and aquatic biota;
 - d. Sampling and analysis of ground water;
 - e. Sampling and analysis of soil and soil pore moisture;
 - f. Hydrogeologic investigation;
- E. Ensure that the discharger is aware of and considers the following cleanup and abatement methods or combinations thereof, to the extent that they may be applicable to the discharge or threat thereof:
 - 1. Source removal and/or isolation;
 - 2. In-place treatment of soil or water:
 - a. Bioremediation;
 - b. Aeration;
 - c. Fixation;
 - 3. Excavation or extraction of soil, water, or gas for on-site or off-site treatment by the following techniques:
 - a. Bioremediation;
 - b. Thermal destruction;
 - c. Aeration;
 - d. Sorption;
 - e. Precipitation, flocculation, and sedimentation;
 - f. Filtration;
 - g. Fixation;

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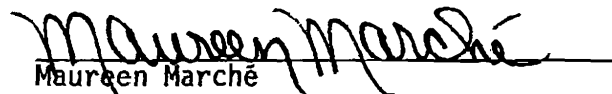
- h. Evaporation;
- 4. Excavation or extraction of soil, water, or gas for appropriate recycling, re-use, or disposal;
- F. Require actions for cleanup and abatement to:
 - 1. Conform to the provisions of Resolution 68-16 of the State Water Board, and the Water Quality Control Plans of the State and Regional Water Boards, provided that under no circumstances shall these provisions be interpreted to require cleanup to levels that are more stringent than background; and
 - 2. Implement the applicable provisions of Chapter 15, Division 3, Title 23, California Code of Regulations, to the extent feasible;
- G. Ensure that dischargers are required to cleanup and abate the effects of discharges in a manner that promotes attainment of background water quality, or the highest water quality which is reasonable if background levels of water quality cannot be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible; any alternative cleanup levels less stringent than background shall:
 - 1. be consistent with maximum benefit to the people of the state;
 - 2. not unreasonably affect present and anticipated beneficial use of such water; and
 - 3. not result in water quality less than that prescribed in the Water Quality Control Plans and Policies adopted by the State and Regional Water Boards.
- IV. The Regional Water Board shall determine schedules for investigation, cleanup, and abatement, taking into account the following factors:
 - A. The degree of threat or impact of the discharge on water quality and beneficial uses;
 - B. The obligation to achieve timely compliance with cleanup and abatement goals and objectives that implement the applicable Water Quality Control Plans and Policies adopted by the State Water Board and Regional Water Boards;
 - C. The financial and technical resources available to the discharger; and

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- D. Minimizing the likelihood of imposing a burden on the people of the state with the expense of cleanup and abatement, where feasible.
- V. The State and Regional Water Boards shall develop an expedited technical conflict resolution process so when disagreements occur, a prompt appeal and resolution of the conflict is accomplished.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on June 18, 1992.


Maureen Marché
Administrative Assistant to the Board