

INFORMATION TO SUPPORT DISCHARGE OF TREATED REMEDIAL WATER TO LAND OR TO SURFACE WATER FOR REGULATION UNDER LAHONTAN REGION GENERAL ORDERS
(revised August 2001)

This guidance document outlines the minimum information required by the California Regional Water Quality Control Board, Lahontan Region, prior to considering issuance of a Notice of Applicability for general waste discharge requirements for the discharge of treated ground water to land or to surface water. In addition to the information outlined in this document, a completed State Form 200 and filing fee must also be submitted.

Discharges to land regulated by the general Order include the following:

1. Percolation trenches or basins
2. Irrigation of landscaping
3. Spray disposal
4. Evaporation trenches or basins
5. Subsurface infiltration
6. Other similar discharges

Discharges to surface water regulated by the general Order include discharges to all bodies defined as surface waters in the Code of Federal Regulations, Section 122.2.

A. Background Information

A basic description of the proposed discharge must be provided to allow staff to determine if a general permit is applicable to the proposed discharge. This information generally includes the following.

1. Identification of the source of pollutants (source areas), the potential seasonal variations in the concentrations of pollutants and flow rates, and a general description of the proposed treatment and disposal systems.
2. Identification of the surface drainage controls, drainage courses and surface water bodies, including rivers, streams, lakes and ponds within one mile of the facility.
3. Locations of all recharge areas (e.g. ephemeral stream channels, percolation ponds, subsurface sewage disposal systems, irrigated agriculture, etc.) within one mile of the facility.
4. Identification of all piezometers and all wells, including monitoring, extraction, injection and supply wells, onsite and offsite within one mile of the site or within an area that may potentially be influenced by the discharge.
5. Property boundaries.
6. Buildings, dwellings, and other significant structures.
7. Map(s) of the site which depicts the location of all surface features identified above, including the process and source areas, the points of discharge and the extraction, treatment and disposal facilities.

8. Documentation of any compliance with the California Environmental Quality Act (CEQA) and all necessary local and state permits. Submit a copy of an Environmental Impact Report (EIR) or a Negative Declaration, if either has been prepared. The Regional Board can not issue Waste Discharge Requirements until CEQA has been satisfied.

B. Chemical and Physical Wastewater Characteristics

A chemical and physical evaluation of the wastewater is needed to allow staff to assess the need for discharge standards and monitoring, and to evaluate the potential for impacts on water quality. While the specifics of the characterization vary with the type of wastes being discharged, the following are minimum requirements for ground water cleanup discharges.

1. A minimum of one of each of the following analyses of the wastewater:
 - a. Chlorinated volatile hydrocarbons (EPA Methods 601 or 8260).
 - b. Aromatic volatile hydrocarbons (EPA Methods 602 or 8260).
 - c. Total petroleum hydrocarbons (TPH) in the gasoline and diesel ranges (3550 GCFID). Additional or alternative TPH analyses may be required if the suspected pollutants contain hydrocarbon fractions outside the range of these tests.
 - d. General or standard minerals analyses, including but not limited to, total dissolved solids (TDS), chloride, sulfate, nitrate, electrical conductivity (EC), pH and temperature.
 - e. Other analyses associated with specific types of waste streams; for example dissolved oxygen (DO) and suspended solids (SS).
 - f. If the discharge is associated with a fuel release site, oxygenates such as methyl tert-butyl ether (MTBE) and related compounds such as TAME, DIPE, etc.
 - g. If the discharge is associated with a solvent release site 1,4 dioxane.
2. On a site-by-site basis, a proposed surface water discharges may be required to conduct acute and chronic toxicity testing (EPA/600-4-85-014 and EPA/440/4-85-032).

C. Disposal Analysis

The disposal analysis usually contains the following:

1. An evaluation of land disposal options for the purpose of screening feasible disposal alternatives. Land disposal alternatives to be evaluated include those listed on page 1 of this document. An evaluation of the environmental and financial constraints for each alternative must be provided. The proposed disposal system may consist of two or more disposal alternatives.
2. A narrative and schematic description of each of the proposed alternatives in the disposal system. Identification of whether disposal occurs on a seasonal basis. Information on the type and size of the disposal alternative(s). Provide design details, including flows, for each disposal alternative.

3. A water mass balance for each land disposal alternative must be provided to assure that sufficient disposal capacity is available at all times under all weather and operational conditions.
4. A discussion on the potential hydraulic and other impacts of the selected wastewater disposal alternative(s) on the migration and capture of the plume.
5. If treated water is to be used for irrigation, property owner, type and permeability of the soils, estimated quantities based on consumptive use, method of application, surface runoff controls and the irrigation season must be identified. Institutional arrangements for control of land must also be identified.
6. If ponds are used for the disposal of the treated wastewater, information on the freeboard and structural integrity and estimates of infiltration and evaporation must be provided.

D. Wastewater treatment system and characteristics

A description of the treatment facility is needed to assure that all waste streams are accounted for, and to aid in design of the monitoring program.

1. A detailed narrative description and schematic presentation of the proposed treatment system, including all processes.
2. Descriptions of the nature and concentration of any chemical additive used for treatment must be included. If the proposed treatment system uses activated carbon, submit an estimate of the breakthrough time for each carbon treatment unit. If the operations and maintenance include backflushing, or other required treatment for maintenance, then a full description of any discharges associated with these procedures must be included.
3. An estimate of the average, maximum and any variation in flows, as well as the design flows (hydraulic and treatment) for the treatment system. All necessary sizing calculations to accommodate the treatment volume must be included.
4. An operation plan describing general operations, maintenance procedures and process controls. Information on the provisions for stand-by power must be provided.
5. A description of the proposed performance monitoring system utilized to determine that the treatment and disposal system is in compliance with WDRs.
6. A spill plan including the preventive and contingency measures for controlling accidental discharges and for minimizing the effect of such an event.
7. Information required to assess protection of the facility from floods and frost.
8. A narrative and schematic description of the proposed extraction system. A discussion of the number, location and pumping rates of the extraction wells.

E. Site Hydrogeology and Characterization of Pollution

1. Depth to ground water, including seasonal variations.
2. Direction and gradient of ground water flow.
3. locations of any known geologic features (e.g. aquitards, subterranean channels, faults, etc.) which could affect pollution migration.
4. Information on the locations, construction, design and analytical results from monitoring wells used to define the lateral and vertical extent of the plume and wells used to monitor the effectiveness of the cleanup.
5. Aquifer characteristics (e.g., hydraulic conductivity, porosity, etc.) determined from a sufficient number of locations by aquifer tests, soil borings, geophysics, etc.
6. Ground water modeling results including calculations and results for extraction system spacing, pumping/collection rates, injection system spacing and injection/infiltration rates.
7. Location, construction and design details of extraction and injection systems (drilling methods, well designs, trench designs, etc.).

G. Receiving Water

1. Provide information on the water quality of the receiving water. Analytical results should be provided for all constituents found in the waste stream as listed under B.1 above. Additional analysis may be requested by Board staff.
2. Descriptions of the direction and magnitude of flows. Sources and seasonal flow variations for surface water and irrigation supply must be provided.
3. For discharges to surface water the following must be provided:
 - a. Conduct an analysis of the impact of the wastewater discharge on the DO content and temperature of the surface receiving water. Calculations should be performed for the range of dilution and temperature conditions expected to be found in the receiving waters. All assumptions should be stated and a sample calculation should be included.
 - b. Chronic toxicity testing (EPA/600-4-85-014 and EPA/440/4-85-032) using a dilution series with water from the surface receiving water source.