

Notice of Preparation

The California State Water Resources Control Board (SWRCB) is proposing to adopt a General Order (GO) for General Waste Discharge Requirements (WDRs) for the Discharge of Biosolids to Land for Use in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities in California. Biosolids are defined as sewage sludge that has been treated, tested, and shown to be capable of being beneficially used as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities as specified under federal regulation. The proposed GO program has several objectives:

- g to comply with state-mandated legislation calling for the development of a regulation for land application of biosolids;
- g to provide for regional permitting of land application projects through a process that protects water quality; and
- g to provide a flexible regulatory framework with regional oversight and incorporation of sound science in the land application of biosolids.

This notice of preparation (NOP), which is required by the California Environmental Quality Act (CEQA), is the first effort to involve the public and interested agencies in developing the scope of the environmental impact report (EIR) for the GO. Section 15083 of the State CEQA Guidelines authorizes and encourages an early consultation or a scoping process to help identify the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in an EIR and to help resolve concerns of affected agencies and individuals. The intent of the scoping process is to identify the significant issues for study in the EIR and to determine the scope of analysis for each issue. This NOP describes the proposed project and its alternatives, indicates the types of environmental effects that could result from implementation of the program, and announces the start of the EIR review process under CEQA. This NOP contains the following information:

- g the purpose of the program EIR, including its intended uses;
- g background on and existing regulations for land application of biosolids in California;
- g the GO and alternatives to be evaluated in the program EIR; and
- g the scope of issues to be addressed in the EIR.

Project Location

The proposed GO is a regulatory program under the direct purview of the SWRCB, with responsibility for implementation, compliance, and enforcement delegated to each of the nine regional water quality control boards (RWQCBs) in the state. Consequently, biosolids management activities throughout the entire state of California may be affected by this GO. However, specifically identified regions within the state have special environmental significance or are otherwise regulated, and this GO would not apply to those regions. These identified exclusion zones are described in detail under “Project Description”.

Background on Biosolids Management in California

Treatment of municipal wastewater typically generates two waste streams: The liquid component, commonly referred to as effluent, is usually discharged to surface waters or used as irrigation water on some types of land. The solid or semisolid component, commonly referred to as sewage sludge, is treated to varying degrees and is typically incinerated, stored in drying beds or ponds, disposed of in landfills, or reused as a soil amendment on some types of land. The GO being considered by the SWRCB will apply to biosolids as defined in the first paragraph of this notice. Figure 1 shows the processes used to treat sewage sludge to produce biosolids at publicly owned treatment works.

More than 20% of the biosolids generated at wastewater treatment plants in the United States are reused through some form of land application. Land application differs from disposal in that biosolids are applied as an amendment to satisfy or supplement the nutrient requirements of crops or vegetation or to condition soils. Land application may involve the use of biosolids on traditional agricultural crops, silvicultural operations, or horticultural plants or in reclamation of disturbed lands or the application of composted or thermally processed materials to public use areas such as parks and residential landscaping. Certain precautions must be taken to ensure that land application does not endanger public health or adversely affect the environment. The U.S. Environmental Protection Agency (EPA) considers land application a beneficial use because it recycles the nutrients and organic matter contained in biosolids back to the soil (U.S. Environmental Protection Agency 1994). Figure 2 shows typical land application practices for agricultural crop production, including staging (or temporary stockpiling of biosolids) at the farm, loading and spreading of biosolids, and incorporation practices.

Land application of biosolids is currently regulated by EPA under Standards for the Use or Disposal of Sewage Sludge (Title 40 Code of Federal Regulations [CFR] Part 503, known as the Part 503 regulations), adopted in 1993. The Part 503 regulations were developed using a risk-based approach to determine appropriate treatment, storage, and application procedures for biosolids that would protect human health and the environment from potentially dangerous or toxic constituents that may be present in biosolids. The Part 503 regulations control the final use of biosolids according to various constituents of concern,

including the level of pathogen reduction, the degree of vector attraction reduction, and the concentration of pollutants in the biosolids. The regulations were developed through extensive scientific peer review, and public notification and comment were sought before they were adopted. Many state and local agencies now rely on the Part 503 regulations for guidance when making decisions about biosolids management or establishing biosolids use regulations.

No single state agency regulates biosolids management in California; biosolids recycling projects may involve oversight by the nine RWQCBs, the California Integrated Waste Management Board (IWMB), the California Air Resources Board, and the California Department of Food and Agriculture (DFA) (California Water Environment Association 1998). In 1983, the California Department of Health Services (DHS) published the Manual of Good Practice for Landspreading Sewage Sludge to promote recycling efforts (California Department of Health Services 1983). Land application of biosolids in California is currently permitted through individual WDRs issued by the RWQCBs in accordance with Title 23, Chapter 9, Division 3 of the California Code of Regulations. Some counties have made land application of biosolids exempt from solid waste regulations, and others have taken an active role in dictating where and how biosolids can be disposed of in their jurisdictions. Some counties have banned the use of biosolids for land application.

To streamline the biosolids permitting process, the Central Valley and Lahontan RWQCBs developed separate general WDRs (another name for GOs) for biosolids land application in 1995. To comply with CEQA, the two RWQCBs prepared negative declarations before adopting their programs. Biosolids application projects were permitted for approximately 50,000 acres under the Central Valley GO. Petitions were subsequently filed with the SWRCB contesting those WDRs. The decisions regarding both petitions were resolved in favor of the petitioner, and the SWRCB sent the GOs back to the respective RWQCBs for revision. However, in rescinding the Central Valley RWQCB's GO, the SWRCB allowed for the continued land application of biosolids on GO sites where the owners had filed for permit coverage before April 1, 1996. In May 1996, while the SWRCB was considering the petitions, a CEQA-based lawsuit was filed by the Central Delta and South Delta Water Agencies in the Superior Court of California, County of Sacramento, seeking to rescind the SWRCB's interim permission for biosolids land application under the GO unless an EIR was prepared subsequently. On June 12, 1997, the Superior Court decided that the SWRCB had exceeded its authority in allowing a limited number of projects to proceed. On September 12, 1997, that decision was amended when Judge Ford of the Superior Court ruled to allow the continued application of biosolids on subject sites and ordered the SWRCB to develop a statewide EIR for land application of biosolids within approximately a 3-year timeframe (by October 2000). The program EIR that is the subject of this NOP is being prepared to comply with that court order.

Project Description

Applicability of the GO Program

The GO program will establish a notification and permit review process for all persons and public entities intending to apply biosolids in bulk for large-scale agricultural, silvicultural, or horticultural uses on sites subject to the jurisdiction of the RWQCBs. The GO is based on the Part 503 regulations and defines discharge prohibitions, discharge and application specifications, transportation and storage requirements, and general procedures and provisions to which all land applicators must adhere. EPA developed the Part 503 regulations to protect highly exposed persons from both pathogens and pollutants. In addition, biosolids regulated under this program must not contain pollutants in concentrations that would exceed the regulatory thresholds for classification as hazardous waste.

Under the GO, the discharger (defined as the individual, business, or organization involved in transporting and applying biosolids) would be legally responsible for implementing and complying with the provisions of the general WDRs issued by the RWQCB in accordance with the GO. The GO applies to the discharger and the owner of site where the biosolids are applied; it is not intended to regulate the generator of biosolids. A key component of the GO requires each biosolids application project operator to prepare and submit a notice of intent (NOI) and filing fee to the appropriate RWQCB (the board for the area in which the biosolids are to be applied) before the application of any biosolids. The RWQCB reviews information contained in the NOI and, if it is found to be adequate, issues a notice of applicability under the general WDRs of the GO. A complete NOI includes a preapplication report that provides the RWQCB with specific information about each field or distinct application area:

- g contact personnel;
- g project location;
- g a map that shows site topography; the locations of staging, storage, and application areas; and surface waters and groundwater wells;
- g the source of and chemical test results for the subject biosolids;
- g a description of proposed application practices and type of crops to be grown;
- g a spill response plan; and
- g any applicable erosion control, biosolids storage, and groundwater monitoring plans that would be required under the GO.

A biosolids application project that is permitted under a single NOI must involve less than 2,000 acres of land, and all application sites must be within 20 miles of each other. In addition, each landowner involved with a biosolids application project under the jurisdiction of the GO must file a separate NOI and filing fee, regardless of the size of the application site. A permitted project may involve either a single application of biosolids or repeated applications. The permitted activities under the GO do not preempt or supersede the authority of local agencies to prohibit, restrict, or control biosolids reuse. The discharger is responsible for obtaining applicable local permits and authorizations.

Relationship of the GO to Part 503 Regulations

Some of the minimum standards established under the Part 503 regulations are applicable to the proposed GO program.

- g** Biosolids must be treated to reduce potential disease-causing pathogens.
- g** Class A biosolids have been treated to eliminate essentially all pathogens; Class A biosolids must be monitored for bacteria growth at the time of use.
- g** Class B biosolids have been treated to significantly reduce, but not completely eliminate, pathogens. Land application of biosolids that meets Class B criteria is restricted by the following conditions:
 - food crops with harvested parts that touch the soil cannot be harvested for 14 months after biosolids application;
 - food crops with harvested parts below the soil cannot be harvested for 20 months after application if biosolids remain on the land surface for 4 months or longer before being incorporated into the soil;
 - food crops with harvested parts below the soil cannot be harvested for 38 months after application if biosolids remain on the land surface for less than 4 months before being incorporated into the soil;
 - feed and fiber crops cannot be harvested for 30 days after biosolids application;
 - animals cannot be grazed on the site within 30 days of biosolids application;
 - turf cannot be harvested for 12 months after biosolids application if the site is likely to have extensive public exposure (e.g., golf courses, parks);
 - public access to land that is likely to have extensive public exposure is not allowed for 12 months after biosolids application; and

- public access to land that is unlikely to have extensive public exposure is not allowed for 30 days after biosolids application.

The Part 503 regulations also outline several alternative chemical and physical treatment processes or management practices that the biosolids must undergo to reduce vector attraction. Vectors are pests (e.g., flies, mosquitos, and rodents) that can be attracted to incompletely treated biosolids and could transmit diseases to other organisms. Biosolids must be treated to at least Class B pathogen reduction and vector-attraction reduction levels before they can be applied to land.

The material quality of biosolids that are to be applied to land under the GO must comply with minimum standards for concentrations of nine trace metals regulated under the Part 503 regulations (Table 1). Biosolids are considered Exceptional Quality (EQ) if they meet all of the pollutant concentration limits and the Class A pathogen reduction standards. EQ biosolids can be distributed in bulk or packaged in bags and are not subject to general management practices other than monitoring and reporting to confirm that the criteria have been met. Biosolids that contain any one of the nine pollutants in concentrations that exceed the EQ pollutant concentration limits, but are below the ceiling limits, can be applied to land but are subject to cumulative and annual pollutant loading restrictions depending on their intended use (Table 1). Biosolids with all pollutants below the concentration limits for EQ biosolids can be applied without loading rate restrictions. If the biosolids contain any of the listed pollutants at concentrations that exceed the ceiling concentration limits, they cannot be applied to land.

Discharge Prohibitions under the GO

Specific discharge prohibitions apply to all land application projects that request authorization under the GO. In general, biosolids application must meet the following conditions:

- g the biosolids cannot contain any chemical at a concentration in excess of the federal or state regulatory limits for classification as a hazardous waste;
- g no application is permitted until the RWQCB has issued a notice of applicability, a set of individual WDRs, or a waiver of WDRs;
- g no application is permitted where the discharge would cause or threaten to cause pollution or create a nuisance as defined in Section 13050 of the California Water Code;
- g no application is permitted in areas not specified in the applicant's NOI;
- g no application is permitted to surface waters or drainage courses;
- g no application is permitted where the application rate would exceed the agronomic rate of nitrogen uptake by plants unless specifically authorized (application may

Table 1. Regulatory Pollutant Concentrations and Loading Rates under Part 503 Regulations

Pollutant	Pollutant Concentration in EQ Biosolids (mg/kg)	Ceiling Concentration in Biosolids Applied to Land (mg/kg)	Cumulative Pollutant Loading Rate Limits (kg/ha)	Annual Pollutant Loading Rate Limits (kg/ha/yr)
Arsenic	41	75	41	2
Cadmium	39	85	39	1.9
Copper	1,500	4,300	1,500	75
Lead	300	840	300	15
Mercury	17	57	17	0.85
Molybdenum	--	75	--	--
Nickel	420	420	420	21
Selenium	100	100	100	5
Zinc	2,800	7,500	2,800	140
Applied to:	Bulk biosolids and bagged biosolids	All biosolids that are land applied	Bulk non-EQ biosolids	Bulk biosolids

Notes: mg/kg = milligrams per kilogram.
 kg/ha = kilograms per hectare.
 kg/ha/yr = kilograms per hectare per year.

Sources: Pollutant concentration in EQ biosolids—Part 503, Table 3; ceiling concentration in biosolids applied to land—Part 503, Table 1.

be allowed for land reclamation sites if a certified agronomist, registered agricultural engineer, or registered civil engineer demonstrates that application would not degrade underlying groundwater);

- g the site must not produce runoff within 30 days of application unless a sufficient buffer of grass (more than 33 feet) is present to prevent biosolids from being carried in runoff from the application site;
- g no application is permitted to frozen or water-saturated ground or during periods of rain;
- g no application is permitted when wind may reasonably be thought to cause biosolids to drift from the site; and
- g no application is permitted in areas subject to erosional inundation or a washout environment from a 100-year return frequency rain event.

Discharge Specifications under the GO

The GO contains specifications for the quantity and quality of biosolids that are allowed to be applied to land. Most of these specifications are similar to the requirements of the Part 503 regulations:

- g Biosolids must be treated to meet Part 503 standards for vector-attraction reduction and be treated to either the Class A or Class B level of pathogen reduction standards.
- g Cumulative (i.e., lifetime) pollutant loading limits for a given site are specified at the same level as those allowed under Part 503.
- g Following incorporation of biosolids into the ground, tilling practices must minimize the potential for erosion of the site from wind, stormwater, and irrigation water.
- g If the slope of the application site is greater than 10%, an erosion control plan must be prepared by a qualified erosion control specialist.

For Class B biosolids, the harvesting period for crops is restricted in an identical fashion to the restrictions imposed by the Part 503 regulations. In addition, the location of application is limited with respect to property lines, municipal and agricultural water supply wells, public roads, surface waters, agricultural buildings, and residential buildings.

Storage and Transportation

The GO specifies conditions for the storage and transportation of biosolids. Major conditions of the GO include the requirements that biosolids be transported in covered, leakproof vehicles and that drivers carry a copy of an approved spill response plan and be trained in its use to ensure proper response to accidents or spill events. The GO defines storage as placement of biosolids on the ground or in nonmobile containers at an intermediate site other than the place of generation or processing for more than 7 days. If biosolids are to be stored at the application sites, the operator must prepare and implement a RWQCB-approved storage program. In general, biosolids must not be stored for more than 7 days, storage areas must be covered between October 1 and April 30, and control measures should be in place to prevent biosolid-related materials from leaching into the soil, entering surface runoff, and being washed out by floods.

GO Exclusion Areas

The proposed GO specifies several areas and characteristic land areas in which biosolids application projects cannot be permitted under the GO. The exclusion areas are generally protected from exposure to biosolids because they are unique or valuable public resources, jurisdictional waters or preserves, or locally designated management areas. The general areas excluded from this GO include the following:

- g the Lake Tahoe Basin;
- g the Santa Monica Mountains Zone;
- g the California Coastal Zone;
- g the area within 0.25 mile of a wild and scenic river;
- g the jurisdictional Sacramento-San Joaquin River Delta and Suisun Marsh areas;
- g the jurisdiction of the San Francisco Bay Conservation and Development Commission; and
- g several specific areas within the jurisdiction of the Lahontan RWQCB, including the Antelope Hydrologic Unit above 3,200 feet, areas in the Mojave River Planning Area, the Hilton Creek/Crowley Lake areas, and portions of the Mono-Owens Planning Area.

Project Alternatives

Section 15126(d) of the State CEQA Guidelines provides the following guidance regarding alternatives analysis in an EIR:

Describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

The proposed project, which is the GO, is a regulatory program that is designed to reduce the potential for adverse environmental effects from land application of biosolids. The program's objectives are to meet the requirements of current state law and a judicial order regarding biosolids regulation; provide regulation through a uniform, statewide, or regional approach that can be efficiently administered on a regional basis by the RWQCBs and effectively minimize adverse environmental effects; and establish a regulation that is flexible and based on sound science and best professional judgment. Given these project objectives and the fact that the program is already designed to minimize adverse effects, the range of alternatives available to further reduce the adverse environmental effects of the project is limited. The alternatives being considered for this EIR are described below.

- g No Project**—The analysis of the No-Project Alternative will consider existing conditions relating to regulation of biosolids application to land, as well as what would be reasonably expected to occur in the foreseeable future if the GO were not approved. Under this scenario, land application of biosolids would likely continue to be regulated by the RWQCBs through individual WDRs or exemptions and by county governments through local ordinances and regulations.
- g Modified GO Provisions and Specifications**—This alternative will be developed during and after the EIR scoping process. It will contain changes to the GO provisions, specifications, or exclusion areas so that adverse environmental effects expected to result from the GO will be eliminated or their severity reduced. Because the significance of potential project impacts is not yet known, the specific changes to the GO cannot be specified until later in the environmental review process.
- g Regulation through RWQCB General Orders**—The objectives of the proposed statewide GO could be met through development and use of GOs by the individual RWQCBs. General orders would be developed by each RWQCB that receives applications for WDRs. These regulations could be similar to or the same as those contained in the proposed project. Some variation in regulations between the individual RWQCBs would be likely because of differences in local conditions.

Issues to Be Discussed in the Draft Program EIR

The following lists identify the resource areas and potential environmental effects that will be discussed in the draft program EIR for the proposed GO. **One of the principal goals of this NOP is to inform the public about issues related to the project and request information on additional issues that should be addressed.**

Hydrology and Water Quality

- g Potential effects on the hydrology or beneficial uses of surface water or groundwater supplies where biosolids are applied to land
- g Potential for conflicts with adopted RWQCB water quality control plan policies regarding attainment of beneficial uses for surface water and groundwater resources
- g Potential long-term water quality impacts from biosolids application under extreme or variable site-specific environmental conditions
- g Potential water quality impacts from transportation-related spills of biosolids

Agriculture and Soils

- g Potential long-term effects of the accumulation of trace metals and other biosolids constituents in soils
- g Potential for adverse effects on soil productivity, especially in areas of extreme soil conditions such as salt-affected environments
- g Potential for adverse effects on soil productivity for specific crops

Public Health

- g Potential human health effects from biosolids application under extreme or variable site-specific conditions
- g Potential health effects from biosolids application on land used for growing crops for human consumption
- g Potential acute and chronic health effects on humans from exposure to regulated and unregulated constituents of concern and pathogenic organisms

- g Potential changes (antagonistic and synergistic) in factors influencing human, plant, and animal diseases

Land Use and Aesthetics

- g Potential land use compatibility and aesthetic conflicts
- g Relation of potential land use impacts to other issues of concern, such as traffic and air quality
- g Consistency with local land use policies and procedures

Biological Resources

- g Potential effects on sensitive biological resources, including special-status species and sensitive plant communities
- g Potential for incidental take of a threatened or endangered species
- g Potential conflicts with regulatory policies or procedures for protection of biological resources

Traffic

- g Potential changes in vehicle miles traveled in an area as a result of transport and reuse or disposal of biosolids
- g Potential effects of biosolids transport on the roadway system and roadbed structure in the immediate vicinity of the biosolids application sites
- g Potential changes in required roadway maintenance or conflicts with local transportation plans

Air Quality

- g Potential changes in local air quality conditions as a result of land application of biosolids, and the resulting impacts on sensitive receptors
- g Potential for localized changes in odors, vehicle emissions, and effects from wind drift
- g Potential change in pollutant emissions as a result of biosolids transport

Noise

- g** Potential changes in local noise conditions as a result of land application of biosolids, and the resulting impacts on sensitive receptors
- g** Potential noise impacts from transport of biosolids based on local thresholds and sensitivities

Cultural Resources

- g** Potential for biosolids application projects to damage, degrade, or otherwise adversely affect significant cultural resources

Cumulative Impacts

- g** Evaluation of the project in conjunction with reasonably foreseeable projects or programs that could result in cumulative resource impacts, especially in areas where water quality, agricultural productivity, air quality, traffic and noise levels, or biological and cultural resources are currently impaired