

NPDES Program Overview And Pesticides Permitting

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The National Pollutant Discharge Elimination System (NPDES) Program is a Federal Regulating Program that began with the 1972 Amendments to the Clean Water Act (CWA). The main objective of the NPDES Program is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The United States Environmental Protection Agency (USEPA) is responsible for implementing the NPDES Regulations but it has delegated its authority to most states including California. In California, the State Water Resources Control Board is the agency responsible for implement the NPDES Program. CWA Section 101(a) has set several program goals including: 1) making the nation's waters fishable and swimmable by 1983, 2) eliminating the discharge of pollutants by 1985, and 3) prohibiting the discharge of toxic pollutants in toxic amounts. The NPDES Program has solved a lot of pollution problems by controlling the most obvious sources of water pollution such as industrial wastewater discharges and sewage discharges. However, we're still working towards achieving the anticipated National goals.

The NPDES regulations prohibit the discharge of any pollutant from a point source to US waters unless the discharge is allowed by an NPDES permit. The key to understanding the NPDES Program is to understand how the terms **pollutant, point source, and waters of the US** have been defined in Chapter 40 of the Code of Federal Regulations (CFR) section 122.2 and interpreted by the regulations.

- A pollutant is defined as any dredged spoil, solid waste, incinerator residue, filter back wash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and Agricultural waste **discharged into water**. It does not include sewage from vessels or water, gas or other material that is injected into a well to facilitate production of oil or gas. However because of recent court decisions, biological pesticides as well as residues of chemical pesticides are now considered pollutants.
- A Point source is defined as any discernible, confined, and discrete conveyance, including but not limited to: Any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft **from which pollutants are or may be**

discharged. However, it does not include return flows from irrigated agriculture or agricultural storm water runoff.

- Waters of the U.S includes all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce including all waters which are subject to the ebb and flow of the tide. All interstate waters, including interstate wetlands. All other waters such as intrastate lakes, rivers, streams, lakes, mudflats, sandflats, ponds, wetlands, sloughs, prairie potholes, intermittent streams, territorial seas, etc. In addition, all tributaries to these mentioned waters are also considered waters of the U.S.

In drafting NPDES Permits, the State Water Board and Regional Boards use Federal and State Regulations, local Water Quality Control Basin Plans, and established policies. Some of the most important tools used when drafting NPDES Permits include:

- The California Toxics Rule which lists toxicity criteria for aquatic life and human health for 126 priority pollutants.
- The Thermal Plan which lists temperature criteria applicable to the different waters of the state.
- The State Implementation Policy which provides the procedures to follow in determining requirements for toxic priority pollutants.
- The applicable Regional Water Board Basin Plans which establish local water quality standards and objectives.
- In addition if a discharge is to the Ocean, then the Ocean Plan applies, which also contains water quality objectives for a number of pollutants and implementation procedures.

An NPDES Permit is an authorization to discharge and has a five-year lifecycle. There is no right to an NPDES Permit, so it can be revoked at any time. To get coverage under an NPDES Permit, an application is required. An NPDES Permit can be issued either as an individual permit or a General permit. An NPDES Permit will include Federal Standard Provisions, effluent limitations, receiving water limitations, monitoring requirements, and applicable pretreatment or sludge management requirements, and any needed special studies. Effluent limitations in an NPDES Permit can be of two types, technology based or water quality based. Technology based limits are established by USEPA depending on the type of industry and they can be found in 40 CFR sections 405 thru 409. Water Quality based limitations on the other hand are established to protect the receiving water beneficial uses and comply with water quality objectives under the California Toxics Rule, Ocean Plan, or the Regional Boards' Basin Plans. When writing an NPDES Permit one needs to consider the following aspects:

- The type of discharge, if it an industry or a Publicly Owned Treatment Works (POTW).
- The discharge flow, because it if is a POTW and is more than 5 million gallons per day (mgd), then the pretreatment regulations would also apply.

- The applicable beneficial uses of the receiving water. These can include Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Process Supply (PROC), Industrial Service Supply (IND), Cold Freshwater Habitat (COLD), Warm Freshwater Habitat (WARM), Water Contact Recreation (REC-1), Non-contact Water Recreation (REC-2), Marine Habitat (MAR), Estuarine Habitat (EST), Wetland Habitat (WET), Wildlife Habitat (WILD), Navigation (NAV), etc.
- The available dilution and assimilative capacity in the receiving water, both of which can have an effect on the stringency of the final effluent limitations. Dilution is available if flows in the receiving water are greater than the discharge flows, and assimilative capacity is available if the concentration of the pollutant in the receiving water is lower than the applicable water quality objective.

Effluent limitations are established where there is reasonable potential for a discharge to cause or contribute to an excursion above water quality standards protective of the applicable beneficial uses of the receiving water. Effluent limitations could be applied for individual pollutants or for whole effluent toxicity. Effluent limitations can result in increased monitoring and reporting costs, or the need for additional special studies for dilution or toxicity evaluation. Non-compliance with effluent limitations will signify penalties and liability as well as the need for additional controls or advanced treatment. There are the 3 triggers we evaluate when determining reasonable potential and the need of an effluent limitation for a specific pollutant:

- Trigger 1- If the maximum effluent concentration of a pollutant is greater than the applicable criteria, then an effluent limitation is needed.
- Trigger 2- If the maximum receiving water concentration of a pollutant is greater than the applicable criteria and the pollutant has also been detected in the effluent, then an effluent limitation is needed.
- Trigger 3- If there is any other information on the pollutant that warrants the need of an effluent limitation. Any other information that may be used includes : Facility type, discharge type, lack of dilution, history of compliance problems, potential toxic impact of discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303d listing of the pollutant, presence of endangered species or critical habitat.

With regards to pesticides, the understanding was that as long as pesticides were being used in conformance with USEPA's Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) labeling directions, pesticides will not pose unreasonable risks to human health and the environment. Thus pesticides applications to waters of the U.S in the past did not require an NPDES Permit, however, because of recent court decisions (9th Circuit *Headwaters v. Talent* in 2001 and 6th Circuit *National Cotton Council v. EPA* in 2009), pesticides applications that discharge to waters of the U.S are now required to be covered under an NPDES Permit. In addition to the court decisions, the State Water Board also regulates pesticides because pesticides cause impairment in many surface water bodies in California, the public expects it, and the regulated community wants to be permitted. Here is a chronology of the permitting events in the last few years:

- It all started with the 9th Circuit court's decision on the Headwaters vs Talent Irrigation District case in March 2001. In Talent, the court ruled that the direct application of an aquatic pesticide into a surface water body or its tributaries is a discharge of a pollutant to waters of the U.S, thus, requiring coverage under an NPDES permit.
- Because of the court's decision, the State Water Board adopted an Emergency Pesticide Permit in July 2001.
- Later in May 2004, the State Water Board adopted the Vector and Weed Control General Permits to replace the Emergency Pesticide Permit.
- In September 2005, the 9th Circuit court ruled in Fairhurst v. Hagener that residual chemical pesticides are pollutants.
- In spite of the 9th Circuit court rulings, in November 2006, USEPA adopted the Aquatic Pesticide Rule. The rule stated that a pesticide applied directly into, over, or near water per FIFRA is not a pollutant, thus, an NPDES permit is not needed.
- However, in January 2009, the 6th Circuit court issued its initial ruling vacating USEPA's Aquatic Pesticide Rule.
- Six months later, in June 2009, the 6th Circuit court granted USEPA's request for a 2-year stay on the 6th Circuit court's January 2009 ruling to allow USEPA time to issue a national General NPDES permit on Aquatic Pesticides. The stay meant that the Rule will remain in place until April 9, 2011.
- In March 2011, the State Water Board adopted three pesticides permits, the Vector Control General Permit, the Aquatic Animal Invasive Species Control General Permit, and the Spray Applications General Permit, and that same month, the 6th Circuit court extended the stay for another 6 months ending on 10/31/2011.
- State Board is scheduled to adopt the Algae and Aquatic Weed Control Applications General Permit on February 19, 2013.

Therefore, since the court rulings and as of February 2013, the State Water Board will have the following General NPDES Permits adopted:

- A Vector Control Pesticide General Permit for control of mosquitoes and mosquito larvae.
- A Spray Applications Pesticide General Permit for pest management and eradication programs for invasive insects and terrestrial weeds, and applicable only to the California Department of Food and Agriculture and the United States Department of Agriculture Forest Service.
- An Aquatic Animal Invasive Species Control Pesticide General Permit for the control of invasive species such as the quagga and zebra mussels, New Zealand mudsnails, Chinese Mitten Crabs, etc.
- Aquatic Weed Control Pesticide for the control of algae and aquatic weed.