

Regulation of Marine Carbon Dioxide Removal Activities under MPRSA and CWA Permits

U.S. Environmental Protection Agency Marine Protection Permitting Program

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Depending on case-specific facts of the proposed marine carbon dioxide removal (mCDR) activity, including the specific type and location of the activity, a permit may be required under the [Marine Protection, Research, and Sanctuaries Act \(MPRSA\)](#) or the Clean Water Act (CWA), specifically the [National Pollutant Discharge Elimination System \(NPDES\)](#) at CWA section 402. Regardless of the applicable statutory permitting program, the permitting process generally includes:

- an assessment of the project to ensure that the proposed activity will not unreasonably degrade the environment or endanger human health;
- opportunities for public review and comment on the proposed activities; and
- coordination with other Tribal, federal, State, and local entities as appropriate including considerations under Clean Water Act section 401, Endangered Species Act, Magnuson Stevens Fishery Conservation and Management Act, and Coastal Zone Management Act.

This document includes:

- [When Does the MPRSA Apply?](#)
- [When Does the Clean Water Act Section 402 Apply?](#)
- [Other Applicable Laws and Policies](#)

When Does the MPRSA Apply?

Unless specifically excluded or exempt from the MPRSA, MPRSA permit authorization is needed to authorize the transportation and "dumping" of any material into "ocean waters" (Figure 1). The MPRSA defines the term "dumping" broadly to encompass "a disposition of material" whether for the purpose of disposal or a purpose other than disposal. There are exemptions to the definition of dumping, including (1) "the disposition of effluent from an outfall structure" regulated under the Clean Water Act and (2) "construction of a fixed structure or artificial island" or "placement of a device" when the construction or placement is for a purpose other than disposal and where the construction or placement is otherwise regulated under another law. An MPRSA permit is not needed for the disposition of material that does not occur in ocean waters, as explained below.

Examples of activities that may require authorization under an MPRSA permit:

- *Transportation and disposition of alkaline materials or nutrients into the ocean* – For example, transportation of alkaline solutions, alkaline minerals, or iron solutions to

ocean waters by or from a vessel or aircraft and releasing the materials into ocean waters.

- *Transportation and release of biomass in the ocean* – For example, the transportation and sinking of macroalgae or terrestrial biomass by or from a vessel into ocean waters.

Where does the MPRSA apply?

The MPRSA applies in "ocean waters." Ocean waters include the open seas lying seaward of the "baseline" of the territorial seas. In general terms, the baseline is the mean lower low water line, also referred to as the ordinary low water mark, along the coast and the "closing lines" across rivers mouths and openings of bays that are depicted on official United States Nautical Charts. Ocean waters are waters of the open sea lying seaward of the baseline and include the waters of the territorial seas, the contiguous zone, the U.S. Exclusive Economic Zone, and the high seas.



Figure 1. The MPRSA applies in "ocean waters"

An MPRSA permit is needed for:

- Anyone transporting material *from the United States* for the purpose of dumping it into ocean waters.
- Anyone in a vessel or aircraft registered in the United States or flying the United States flag transporting material *from any location* for the purpose of dumping it into ocean waters.

- Any United States department, agency, or instrumentality transporting material *from any location* for the purpose of dumping it into ocean waters.
- Any other person dumping material *transported from a location outside the United States* into the territorial sea of the United States, or into a zone contiguous to the territorial sea of the United States, to the extent that it may affect the territorial sea or the territory of the United States.

More information about MPRSA permits

- The EPA issues MPRSA permits for all materials other than dredged material (for which permits are issued by the U.S. Army Corps of Engineers). States do not have authority to issue MPRSA permits. Section 106 of the MPRSA voids any other license, permit, and authorization that purports to authorize an activity regulated by the MPRSA.
- Additional information about MPRSA permits, including frequently asked questions, is available on the EPA's [Marine Protection, Research and Sanctuary Act Permits webpage](#).

When Does the Clean Water Act Section 402 Apply?

In general, discharges of pollutants from point sources into “navigable waters” (meaning “waters of the United States, including the territorial seas”) are regulated under the Clean Water Act and require a National Pollutant Discharge Elimination System (NPDES) permit.

An mCDR activity that adds a pollutant (e.g., alkaline solution, CO₂-depleted water) through a land-based outfall structure or from a fixed structure at sea into ocean waters is regulated under the Clean Water Act by an NPDES permit. The ocean discharge criteria (Clean Water Act section 403) and other Clean Water Act requirements are applied when developing an NPDES permit for a discharge into ocean waters.

Additionally, an mCDR activity that adds pollutants from a point source inside a bay, harbor, or body of water *landward* of the baseline may require authorization under a Clean Water Act NPDES permit. Such activities are not subject to MPRSA permitting because MPRSA jurisdiction does not extend to internal marine or estuarine waters inside the baseline of the territorial sea.

Examples of mCDR activities that may require authorization under a Clean Water Act NPDES permit:

- *Changes to the effluent discharge at an existing wastewater treatment plant facility* – For example, additions of alkaline solutions or materials into a NPDES permitted effluent discharge would be regulated under the NPDES permit for that facility. In this case, the project proponent would communicate with the current NPDES permittee and the regulatory authority to ensure that any changes in the

facility's discharges remain within the scope of the authorization of the existing NPDES permit or whether an NPDES permit modification is necessary because the original permit application did not disclose the change related to the additions of alkaline solutions or materials.

- *Discharges into waters landward of the baseline* – For example, discharges of alkalinity materials into internal waters, such as water located inside the closing line of a bay, harbor, or river mouth, would require NPDES permit authorization rather than authorization under the MPRSA.

More information about NPDES permits

- NPDES permits are issued by EPA or an EPA-authorized state program. A state may receive authorization for one or more of the NPDES program components. Read more about [NPDES State Program Authority](#).
- General information about NPDES permits, including frequently asked questions, is available on the [NPDES Permit Basics webpage](#).
- Information on permit application forms for EPA-issued NPDES permits is available on the [NPDES Applications and Forms-EPA Applications webpage](#).

Other Applicable Laws and Policies

The applicable Tribal, federal, State, or local laws or policies that apply to a proposed mCDR activity depend on the location and the nature of the mCDR activity. For State-issued CWA 402 NPDES permits, project applicants should discuss their project with the State permitting agency to identify applicable Tribal, State, or local requirements.

Federal actions, such as funding, conducting, or permitting a project, are subject to certain federal laws and agency policies. For example:

- The EPA follows the agency's [Policy on Consultation with Indian Tribes](#).
- If the proposed activities may affect the waters of a Tribe, State, or territory, coordination with those entities regarding analyses of potential impacts to coastal resources or water quality may be required (see [Coastal Zone Management Act \(CZMA\)](#) and [Clean Water Act Section 401](#)).
- If the proposed activities may affect habitats for protected species, essential fish habitats, or a national marine sanctuary, coordination or consultation with [NOAA Fisheries](#), [NOAA Office of National Marine Sanctuaries](#), and/or [U.S. Fish and Wildlife Service](#) may be required.