



Colorado's Regulation for Direct Potable Reuse

1 What does Colorado's new Direct Potable Reuse (DPR) regulation cover? How is DPR defined?

The DPR regulation is a new section in Colorado's drinking water regulation, specifying the requirements for DPR as a new source water for drinking water supply. The regulation says, "DIRECT POTABLE REUSE' means using a series of processes that produce **finished water** utilizing a source containing **treated wastewater** that has not passed through an **environmental buffer.**" Each bold phrase is defined elsewhere in the regulation or in the Safe Drinking Water Act. This definition was crafted to specifically exclude indirect potable reuse (IPR) and nonpotable reuse, so its applicability is clearly delineated. The regulation is supported by new CDPHE policies for DPR and Enhanced Source Control, which were written to provide additional specificity in the requirements for DPR in Colorado.

2 What are some of the regulation's key requirements?

The regulation requires hazard analyses and critical control point strategies. Alternatives to reverse osmosis treatment are allowable under certain conditions specified in the regulation. The regulation requires three pathogen barriers for viruses (V), giardia (G), and cryptosporidium (C). Suppliers can choose to use the default log reduction requirements (12 log V, 10 log G, 10 log C), or they may qualify for log reduction requirements as low as 8 log V, 6 log G, and 5.5 log C after extensive characterization of pathogens of the source water. Chemical removal requirements include pilot testing, advanced oxidation, and multiple barriers, using target chemicals and indicator compounds (total organic carbon and others selected by the utility) with Action and Alert Limits.

The regulation also specifies community outreach requirements, including enhanced outreach to disadvantaged communities. Any supplier proposing a DPR system must submit a communications and outreach plan when applying to CDPHE for DPR. In addition, suppliers will be required to develop and implement an Enhanced Source Control Program to assure continuous production of water that is safe for consumption.

3 How do we know Colorado's regulation is sufficient to make the water safe?

Advancements in water treatment technology allow water from just about any source to be treated and purified to a very high standard making it safe to drink. Purified water from the DPR treatment process is tested and continuously monitored to ensure it meets or exceeds public health standards, including standards established under the Federal Safe Drinking Water Act by the US Environmental Protection Agency. Other states are developing DPR regulations as well, each geared toward protecting public health and tailored to that state's systems.

4 Why was the regulation developed before any DPR systems were formally proposed in Colorado?

CDPHE and the regulated community want to be well-prepared for future DPR projects. By proactively developing this regulation, Colorado took the time to work through a deliberative, thoroughly vetted, stakeholder-supported rulemaking process. As such, Colorado is better positioned to meet future demands

and address water supply emergencies. Utilities considering DPR now know the requirements for DPR and can confidently make informed decisions about DPR for their respective communities. Moreover, having defined standards from a state regulatory authority can help build community confidence in potable water reuse.

5 What about Indirect Potable Reuse (IPR) and nonpotable reuse? How are water rights addressed?

The definition of DPR in the new regulation explicitly does not address IPR. CDPHE regulates IPR systems via discharge permitting requirements under the Clean Water Act and the application of Colorado's drinking water program. Nonpotable reuse is governed separately under Colorado's Regulation No. 84, which has been expanded and refined multiple times since it was first adopted in 2000. All forms of water reuse in Colorado require compliance with water use and water rights laws, which are separate from water reuse regulations that specify water quality and safety of water reuse systems.

6 Tell me more about the timeline and process for developing the regulation.

WaterReuse Colorado (WRCO) played a key part in advocating for a DPR regulation that is protective of public health. In 2018, WRCO provided local cost-share funding for a Colorado Water Conservation Board (CWCB) grant to prepare a [conceptual framework for the regulation](#). Building on that foundation, a [2019 report](#) by an independent panel of experts facilitated by the National Water Research Institute recommended more detailed requirements for DPR. Two carbon-based advanced treatment (CBAT) DPR demonstrations ([fixed-site in Denver in 2018](#) and a [mobile unit first deployed in Colorado Springs](#) in 2021) were supported with WRCO and CWCB funding, helping validate treatment process design criteria for the regulation and foster DPR acceptance through outreach and education. CDPHE convened a stakeholder process including utility representatives and industry experts in 2021 with work groups to develop and vet regulatory language, professionally facilitated with support from WRCO and CWCB. In 2022, regulatory language was refined and finalized, leading to formal adoption by the Water Quality Control Commission at a November 2022 rulemaking hearing. In all, the process took approximately five years and leveraged thousands of hours of in-kind support from the stakeholder work groups. WRCO played a key role in convening and supporting the process.

7 What related activities supported acceptance of and interest in DPR?

Interest in DPR has quickly escalated in recent years in Colorado, as nonpotable reuse has become a baseline expectation in many communities and water awareness has become more prominent. Drawing on national-level research and conference presentations, regulators became increasingly confident in the ability to safely implement water reuse programs. In 2015, based on WRCO input, Colorado's State Water Plan highlighted the role potable reuse can play in mitigating projected water supply shortfalls. Other events, such as brewing beer and soda from the 2018 and 2021 DPR demonstrations, tours of the demonstration facilities, and community events have elevated community awareness and acceptance of DPR. WRCO also provided ongoing support, such as approaching the State Legislature's Interim Water Resources Review Committee to present information on DPR and its role as a sustainable element of the state's future water supply portfolio.

8 Where can I learn more?

CDPHE's DPR website provides access to the regulatory language, supporting policies, and information about the process of developing the regulation: https://cdphe.colorado.gov/Regulation_11_Direct_Potable_Reuse.

WRCO's DPR website includes documents, supporting information, and other historical information related to DPR in Colorado: <https://watereuse.org/sections/watereuse-colorado/direct-potable-reuse/>.