

Wastewater Operator Certification Study Guide

Rotating biological contactor

Department of Natural Resources

Wastewater Operator Certification. Biological Treatment - Attached-Growth Processes Study Guide, February 2016 Edition Penn - A rotating biological contactor or RBC is a biological fixed-film treatment process used in the secondary treatment of wastewater following primary treatment. The primary treatment process involves removal of grit, sand and coarse suspended material through a screening process, followed by settling of suspended solids. The RBC process allows the wastewater to come in contact with a biological film in order to remove pollutants in the wastewater before discharge of the treated wastewater to the environment, usually a body of water (river, lake or ocean). A rotating biological contactor is a type of secondary (biological) treatment process. It consists of a series of closely spaced, parallel discs mounted on a rotating shaft which is supported just above the surface of the wastewater. Microorganisms...

Denver's Direct Potable Water Reuse Demonstration

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Project

were state certified for water and wastewater operations, including certification at the highest level for lead operators. While staffing was substantially

The Denver Direct Potable Water Reuse Demonstration Project was an initiative to evaluate the feasibility of using treated wastewater, including sewer water, as a source of drinking water in Denver, Colorado. The intent was to demonstrate that the treated water was of sufficient quality to be piped directly into the Denver drinking water system. Conducted between 1979 and 1990, this \$30 million project was managed and operated by Denver Water, the city's primary water utility, and was partially funded by the United States Environmental Protection Agency (EPA). The project's primary objectives were to assess the safety, quality, technical feasibility, and public and regulatory acceptance of direct potable water reuse.

The central feature of the project was a 1-million-gallon-per-day (mgd) treatment...

Water supply and sanitation in South Africa

the blue drop certification system for drinking water, the government has launched a green drop certification for municipal wastewater treatment. As of

Water supply and sanitation in South Africa is

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characterised by both achievements and challenges. After the end of Apartheid South Africa's newly elected government struggled with the then growing service and backlogs with respect to access to water supply and sanitation developed. The government thus made a strong commitment to high service standards and to high levels of investment subsidies to achieve those standards. Since then, the country has made some progress with regard to improving access to water supply: It reached universal access to an improved water source in urban areas, and in rural areas the share of those with access increased from 66% to 79% from 1990 to 2010.

South Africa also has a strong water industry with a track record in innovation. However, much less progress has...

Water supply and sanitation in the Philippines

water pollutants generated in their discharge of wastewater into water bodies. Owners, or operators of facilities, that discharge regulated waste are

The Philippines' contemporary water supply system dates back to 1946, after the country declared independence. Government agencies, local institutions, non-government organizations, and other corporations are primarily in charge of the operation and administration of water supply and sanitation in the country.

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Marine sanitation device

to treat wastewater. The first stage involves wastewater entering the shaker screens which removes any noticeable solids. Then the wastewater is passed

A marine sanitation device (MSD) is a piece of machinery or a mechanical system that is dedicated to treat, process, and/or store raw, untreated sewage that can accumulate onboard water vessels. It does not refer to portable devices such as portable toilets.

LEED

Council to oversee LEED certification in Canada". Green Business Certification Inc. Retrieved 9 December 2022. "Certification". Canada Green Building

Leadership in Energy and Environmental Design (LEED) is a green building certification program used worldwide. Developed by the non-profit U.S. Green Building Council (USGBC), it includes a set of rating systems for the design, construction, operation, and maintenance of green buildings, homes, and neighborhoods, which aims to help building owners and operators be environmentally responsible and use resources efficiently.

As of 2024 there were over 195,000 LEED-certified buildings and over 205,000 LEED-accredited

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professionals in 186 countries worldwide.

In the US, the District of Columbia consistently leads in LEED-certified square footage per capita, followed in 2022 by the top-ranking states of Massachusetts, Illinois, New York, California, and Maryland.

Outside the United States, the top...

Renewable natural gas

built such as facilities that digest manure, household organic waste, or wastewater treatment plants. Biogas is also byproduct of the decomposition of organic

Renewable natural gas (RNG), also known as biomethane, is a renewable fuel made from biogas that has been upgraded to a quality similar to fossil natural gas and has a methane concentration of 90% or greater. By removing carbon dioxide and other impurities from biogas, the concentration of methane is high enough that it becomes possible to distribute RNG via existing gas pipeline infrastructure. RNG can be used in existing appliances, including vehicles with natural gas burning engines (natural gas vehicles).

The most common way of collecting biogas with which to produce biomethane is through the process of anaerobic digestion. Anaerobic digestion facilities are either purpose built such as facilities that digest manure, household organic waste, or wastewater

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treatment plants. Biogas is also...

Clean Water Act

including funding for publicly owned treatment works for the improvement of wastewater treatment; and maintaining the integrity of wetlands. The Clean Water

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters; recognizing the primary responsibilities of the states in addressing pollution and providing assistance to states to do so, including funding for publicly owned treatment works for the improvement of wastewater treatment; and maintaining the integrity of wetlands.

The Clean Water Act was one of the first and most influential modern environmental laws in the United States. Its laws and regulations are primarily administered by the U.S. Environmental Protection Agency (EPA) in coordination with state governments, though some of its provisions, such as those involving filling or dredging...

Environmental impact of paper

logging. The forest certification systems that are currently the most used are: The Program for the Endorsement of Forest Certification (PEFC), in most

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European

The environmental impact of paper is significant. This has led to changes in industry and behaviour at both business and personal levels. With the use of modern technology such as the printing press and the highly mechanized harvesting of wood, disposable paper became a relatively cheap commodity, which led to a high level of consumption and waste. The rise in global environmental issues such as air and water pollution, climate change, overflowing landfills and clearcutting have all led to increased government regulations. There is now a trend towards sustainability in the pulp and paper industry as it moves to reduce clearcutting, water use, greenhouse gas emissions, and fossil fuel consumption and to clean up its influence on local water supplies and air pollution.

According to a Canadian...

Ecotourism

create national and international ecotourism certification programs. National ecotourism certification programs have been put in place in countries such

Ecotourism is a form of nature-oriented tourism intended to contribute to the conservation of the natural environment, generally defined as being minimally impactful, and including providing both

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contributions to conservation and environmental education. The definition sometimes also includes being financially beneficial to the host community or making conservation financially possible. There are a range of different definitions, and the correct definition of the term was an active subject of debate as of 2009. The term is also used more widely by many organizations offering nature tourism, which do not focus on being beneficial to the environment.

Since the 1980s, ecotourism has been considered an important endeavor by environmentalists for conservation reasons. Organizations focusing on ecotourism...

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