

BMP C253: pH Control for High pH Water

Description

When pH levels in stormwater rise above 8.5 it is necessary to lower the pH levels to the acceptable range of 6.5 to 8.5, this process is called pH neutralization. Stormwater with pH levels exceeding water quality standards may be treated by infiltration, dispersion in vegetation or compost, pumping to a sanitary sewer, disposal at a permitted concrete batch plant with pH neutralization capabilities, or carbon dioxide sparging. BMP C252 gives guidelines for carbon dioxide sparging.

Reason for pH neutralization

A pH level between 6.5 and 8.5 is typical for most natural watercourses, and this pH range is required for the survival of aquatic organisms. Should the pH rise or drop out of this range, fish and other aquatic organisms may become stressed and may die.

Causes of high pH

High pH levels at construction sites are most commonly caused by the contact of stormwater with poured or recycled concrete, cement, mortars, and other Portland cement or lime-containing construction materials. (See BMP C151: Concrete Handling for more information on concrete handling procedures). The principal caustic agent in cement is calcium hydroxide (free lime).

Disposal Methods

Infiltration

- Infiltration is only allowed if soil type allows all water to infiltrate (no surface runoff) without causing or contributing to a violation of surface or groundwater quality standards.
- Infiltration techniques should be consistent with Volume V, Chapter 7

Dispersion

Use BMP T5.30 Full Dispersion

Sanitary Sewer Disposal

- Local sewer authority approval is required prior to disposal via the sanitary sewer.

Concrete Batch Plant Disposal

- Only permitted facilities may accept high pH water.
- Facility should be contacted before treatment to ensure they can accept the high pH water.