Mount Vernon

Sweeter Soil with Substantial Savings!

Free Lime Sludge Available from the City of Mount Vernon

Free Lime Sludge is Available to Local Farmers Beginning June 1, 2022
At the Mount Vernon Water Treatment plant there are thousands of tons of lime available to the local farming community free of charge. Beginning on June 1, 2022, Kokosing Construction Company will be removing lime sludge from the City's lime lagoons located on the City's west side. Kokosing will load out the material free of charge at the site to local farmers during the duration of the project which is anticipated to continue through mid-June. For more information on lime sludge from the Mount Vernon Water Treatment Plant, please contact Dr. Thomas Marshall, P.E., Public Utilities Director for the City of Mount Vernon, Ohio at (740) 393-9504.

Water Treatment Lime is a Good Source of Lime
Lime addition to crop-production soils can result in increased yields by increasing pH and calcium availability. The lime requirement is based on the lime test index which is a measure of the total exchangeable soil acidity. Agricultural lime is typically mined from a limestone quarry and is generally known as either dolomitic (high magnesium) or calcite (high calcium) lime. The effectiveness of lime is measured in terms of total neutralizing power (TNP). While the quality of quarry lime is high, so is the cost. An alternative to quarry lime is lime sludge from a municipal water treatment plant. Lime sludge, generated from the municipal water softening treatment process, typically has a TNP that compares well with the TNP of commercial lime products. (see analysis below)

Lime is Used in Water Softening Treatment
Lime is used to soften water in the Mount Vernon water treatment plant. The hardness compounds of calcium and magnesium are removed by adding hydrated lime to the City's well water. The process involves slaking quick lime, CaO, to form calcium hydroxide or Ca(OH)2. The calcium hydroxide is added to the raw water supply increasing the pH and setting off a series of chemical reactions. The resulting precipitating compounds include calcium carbonate, CaCO3, and magnesium hydroxide Mg(OH)2. These precipitates are settled out in large tanks then drawn off and pumped to sludge storage lagoons. The softened water is further treated by adding carbon dioxide to reduce the pH back to normal levels, followed by filtration and disinfection before being distributed to customers.

The City of Mount Vernon

Lime Characteristics

2022

Analyte	Result	Units	Tested
Total Neutralizing Value (CaCO3)	61.3	%	09/08/2021
Moisture	36.6	%	09/08/2021
pH	8.79	S.U.	04/20/2022
Total Solids	60.50	%	03/29/2022
Aluminum [Al]	343.63	ppm	03/29/2022
Arsenic [As]	6.77	ppm	03/29/2022
Barium [Ba]	238.38	ppm	03/29/2022
Boron [B]	< 100	ppm	09/08/2021
Cadmium [Cd]	< 0.75	ppm	03/29/2022
Calcium [Ca]	21.20	%	09/08/2021
Chromium [Cr]	< 2.40	ppm	03/29/2022
Copper [Cu]	< 1.51	ppm	03/29/2022
Iron [Fe]	1620	ppm	09/08/2021
Lead [Pb]	< 1.51	ppm	03/29/2022
Magnesium [Mg]	0.0094	%	09/08/2021
Manganese [Mn]	311.75	ppm	03/29/2022
Mercury [Hg]	< 0.03	ppm	03/29/2022
Nickel [Ni]	< 6.69	ppm	03/29/2022
Phosphorus [P]	< 0.0005	%	09/08/2021
Potassium [K]	< 0.005	%	09/08/2021
Selenium [Se]	< 1.51	ppm	03/29/2022
Silver [Ag]	< 0.75	ppm	03/29/2022
Sodium [Na]	0.0002	%	09/08/2021
Sulfur [S]	< 0.0005	%	09/08/2021
Zinc [Zn]	< 2.05	ppm	03/29/2022

*Samples collected on 09/08/2021 for field application acceptability.
**Samples collected on 03/29/2022 for beneficial use application process.
Results based on an average of multiple samples collected from varying locations and depths within the western lime lagoon.