



PRESENTACIÓN "The Nalco Water Handbook"

From the Preface

A lot has changed in treating and conserving water since we last updated this book. When we looked at the water treatment needs of today and the future, it became apparent that much of the book would need to be rewritten. With that mindset, we evaluated the manner in which we had presented the content in the past, and then made some improvements.

We restructured the presentation of the book so that it flows much like a water treatment process. The Basic Water Chemistry section is a broad discussion around the characteristics of water, the impurities we pay attention to in treating water, and its basic availability. The Applications section of the book takes on water treatment in sequence from the time it enters your plant until the time it is discharged back to the environment. Each subsection groups content by subject matter as it pertains to removing impurities, use in steam and cooling systems, and then discharge. The section on Energy in Water Systems takes a broader look across not just steam, but cooling and wastewater as well. This section discusses energy conservation. We present various focus areas in each of these chapters to help manage your energy input and outputs in these systems.

Our industry section of the book takes a refreshed look at how the various applications come together across many different industries, and the role water plays in the production of consumer items, petroleum, synthetic fuels, metals, paper, and power to name a few. While these chapters will discuss water use inside each industry you will see that the water needs and requirements are vastly different from industry to industry. The basic understanding of the particular applications themselves is covered in the earlier chapters.

We have made liberal use of tables, illustration, photographs, and line drawings to help place the discussion in context. The majority of the graphics are new to this edition. The changes we have made to the content and the presentation should make this book valuable across a wide range of users such as the plant operators, engineering departments, process management, maintenance groups, and plant managers to name a few.

Daniel J. Flynn
Editor



condorchem. wwa
water waste air



From the Foreword

The demand for usable fresh water has never been greater in earth's history - abundant in parts of the world, and increasingly scarce in others. Our global agriculture depends on an annual fresh water supply sufficient to produce crops and livestock; our industries are powered by waters' ability to convey heat; and each of us depends on a daily intake of clean fresh water to help sustain life. As we become ever more conscious of our role as good stewards of this precious resource, we look for different methods to help us conserve, preserve, and use responsibly, the water around us.

Since the beginning of the Nalco Company in the late 1920s, Nalco has continually looked to improve the quality of water for industrial use, and also for final discharge back to our environment. Over these years industries have become more and more demanding in the quality of water necessary for their process use. These changing requirements place an ever-increasing need for the removal and control of the contaminants found in water, allowing our processes to operate at peak performance and reliability. Regulations around the world targeting pollutant discharge to the air, land, and water continue to tighten, governing how we

send the water back to the environment. Efforts to minimize fresh water use, particularly from ground water, are increasing through a variety of different methods, including water recycle, water cascading, more effective contaminant removal, implementation of sophisticated chemical feed and control equipment, and the use of innovative chemistry. The advancement and use of these technologies helps run operations economically with a decreasing demand on the basic fresh water resources, saving significant quantities in the process.

Our third edition of The Nalco Water Handbook takes a close look at the ever-changing landscape in treating water for various applications, processes, and industries. The application of the principles discussed within this book, will help minimize water usage, maximize heat transfer, maintain clean equipment, lengthen asset life, and help reduce cost. Helping you achieve your water treatment target is the goal of this book. We trust you will find the content informative, useful, and actionable.

J. Erik Fyrwald
Chairman, President, and Chief Executive Officer

Condorchem Ibérica, S.L.

Gregal, 7 - Pl.Buvisa - 08338 Premià de Dalt (Barcelona)
Tlf. 937547705 - Fax 937547706
condorchem@condorchem.es - www.condorchem.com