

**BOILER FEED WATER: A
CONCISE HANDBOOK
OF WATER FOR BOILER
FEEDING PURPOSES**

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Boiler Feed Water: A Concise Handbook of Water for Boiler Feeding Purposes by Percy G. Jackson

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PERCY G. JACKSON

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A CONCISE HANDBOOK OF
WATER FOR BOILER
FEEDING PURPOSES
(ITS EFFECTS, TREATMENT, AND ANALYSIS)

BY

PERCY G. JACKSON, F.I.C.

FORMERLY CHEMIST TO THE NATIONAL BOILER AND
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PREFACE

So far as I am aware no book on the subject of Boiler Feed Water has hitherto been written by any one having extensive experience as chemist to a boiler insurance company, and I feel that an intimate practical knowledge of the subject cannot otherwise be so well obtained.

The investigation of occasional isolated cases of feed-water trouble is undoubtedly very useful, and much helpful information is thus obtained, though it can hardly be expected to yield the same general knowledge of the subject as that resulting from the consideration of analyses in conjunction with the history of the boilers, or the batteries of boilers concerned, though I am well aware that even then there are many possible factors which are not thus disclosed. Slight variations in the working conditions, which may not even be brought to notice by a special investigation of a particular case, can yet have an important bearing on the subject, especially in those instances where one or more boilers in a battery are affected, while the others are in a satisfactory condition.

Makers of water softening plants have not usually the expert chemical staff necessary thoroughly to investigate troubles which continue even after their plants have been

put to work, nor should they be (although they usually are) expected to render continued and expensive services gratis, after having put down a plant which is capable of doing its work efficiently. Some of them do keep in touch with their plants for a long time, and offer regular advice as to necessary changes in the treatment as judged from log sheets of daily tests made by the users, but beyond this they cannot reasonably be expected to go. If they erect a plant capable of reducing the hardness-forming salts to a minimum, and eliminating oil; and if the plant is so designed and constructed as to continue to work satisfactorily with reasonable attention for a number of years, they may be considered to have fulfilled their obligations, unless, of course, they have given special guarantees to effect specified results.

It is not intended that this book shall explain theoretically why various constituents of feed water cause certain undesirable results, but only how experience has shown that these undesirable results may be eliminated, or at least mitigated.

There is still much to be learnt on the subject, and probably will be until some one comes forward with unlimited time to devote to such matters, and who is unhindered in the thorough prosecution of his researches by financial considerations. He must not expect to carry through the work in a laboratory, but must spend much of his time in the stoke-hole, always observant of details, able to advise slight or important changes in the working conditions, and note the results obtained thereby.

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All efforts to fathom boiler feed water troubles are handicapped by the fact that it is impossible to see what is actually happening inside a boiler while it is at work, and by the impossibility of obtaining exact working conditions in laboratory experiments.

This work is the result of the experience largely gained by me while working as chemist to the National Boiler and General Insurance Company, Limited, and I wish to express my indebtedness, for allowing me to publish this book, to the Company, and to Mr. Edward G. Hiller, the chief engineer, and other engineers of his staff, who have, during the years of my service, given me the benefit of their experience.

I trust the information in this book will be found to be reliable, concisely stated, and of practical use.

PERCY G. JACKSON

January 1919