

DEPARTMENT OF THE INTERIOR

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UNITED STATES GEOLOGICAL SURVEY

GEORGE OTIS SMITH, Director

**Water-Supply Paper 396**

## PROFILE SURVEYS

IN THE

# COLORADO RIVER BASIN IN WYOMING, UTAH, COLORADO, AND NEW MEXICO

PREPARED UNDER THE DIRECTION OF

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# PROFILE SURVEYS IN THE COLORADO RIVER BASIN IN WYOMING, UTAH, COLORADO, AND NEW MEXICO.

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Prepared under the direction of W. H. HERRON, Acting Chief Hydrographer.

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## INTRODUCTION.

In connection with studies of the utilization of rivers the United States Geological Survey has from time to time made surveys and profiles of some of the more important streams of the country and published the results in its series of water-supply papers. In some parts of the country these surveys were made chiefly to determine the location of power sites on streams adapted to the development of power by low or medium heads of 20 to 100 feet; in others the purpose of the surveys was more closely related to the possibility of storing water at certain points and diverting it for use in irrigation.

The earlier surveys, such as those of Green River above Fontenelle, Wyo., made in 1909 (Pls. I-V) were of a reconnaissance type and as a rule show no contours along the banks. The later surveys are typified by that of the Gila in the vicinity of Cliff and Redrock, N. Mex., made in 1915 (Pls. XLI-XLIII) and show conditions in much greater detail. These later surveys were made by means of plane table and stadia. Elevations are based on heights derived from primary or precise levels of the United States Geological Survey. The maps are made in the field and show not only the outlines of river banks, the islands, the positions of rapids, falls, shoals, and existing dams, and the crossings of all ferries and roads, but the contours of banks to an elevation high enough to indicate the possibility of using the stream.

## SURVEYS IN THE COLORADO RIVER BASIN.

The results of surveys in the Colorado River basin here presented include some of the earliest as well as some of the latest river surveys. The streams to which these surveys relate are fully described in Water-Supply Paper 395 (Colorado River and its utilization, by E. C. La Rue), and the plates herewith should be studied in connection with that report.

Studies on the headwaters are represented by 21 plates (I-XXI) showing plans and profiles of the Green and its tributaries above the junction with the Grand, studies on the Grand by 16 plates (XXII-XXXVII) showing plans and profiles above the junction with the Green and 3 plates (XXXVIII-XL) showing plans and profiles along the Gunnison. The surveys of the Green below Gunnison Butte, Utah (Pls. XIII-XXI), were made by the United States Reclamation Service and are published through the cooperation of that bureau. The only work on tributaries below the junction of the Grand and Green is represented by the profiles of the Gila in the vicinity of Cliff and Redrock, N. Mex. (Pls. XLI-XLIII).

