

FINAL REPORT

on the

GEOLOGY OF THE WHIPPLE MOUNTAIN

TUNNELS

by

F. L. Ransome

May 3, 1933

C O N T E N T S

	<u>Page</u>
Introduction	1
General Geology	2
Rocks	2
Faults	7
Geologic sections	12
Comments along the line	14
Underground water	21
Gas	22
General conclusions	22

Map and Illustrations

Plate I.

- A. Geologic map, Colorado River and Copper Basin tunnels
- B. Geologic map, Whipple Mountain tunnel
- C. Geologic sections

Plate II.

- A. View northwest across Gene Canyon, showing relations of gneiss, Gene Canyon formation, and Copper Basin formation
- B. View south, in Copper Basin, showing red sandstones of Copper Basin formation

Plate III.

- A. Copper Basin dam site
- B. Looking upstream from below dam site

Plate IV.

- A. Monument Peak and Bowman Wash thrust
- B. Bowman Wash thrust, west of Barometer Wash

Plate V.

- A. Pebbly sandstone of the Copper Basin formation
- B. North end of Monument Peak ridge

Introduction

The Whipple Mountains, lying on the right bank of the Colorado, within the pronounced bend which that stream makes north of Parker, in the vicinity of the mouth of Williams River, constitute a compact mass about 25 miles long, from east to west, and about 15 miles wide. Their maximum elevation is 4,110 feet. From a point about a mile upstream from the mouth of Williams River, the aqueduct line traverses the mountains in a general southwesterly direction. The first tunnel, the Colorado River tunnel, 5,640 feet in length, extends from the head of the pump lift on the river, elevation 710.5, to the Gene Wash reservoir. (See Plate I-B.) The second tunnel, the Copper Basin tunnel, runs nearly west from Gene Wash to Copper Basin, with a length of 750 feet in its eastern section and of 11,600 feet in its western section.

The third tunnel, the Whipple Mountain tunnel, 32,190 feet in length, extends in a general southwesterly direction, from Copper Basin to a point of emergence on the desert slopes over which the line will be carried in conduit, north of Vidal.

The field work upon which this report is based was done at various times, much of it before the topographic map which forms the base of Plate I was available. A final review of the ground, with the topographic map in hand, was made from April 27 to 30, 1933.