

III. OPERATIONS

The average operating conditions are summarized in Table I, opposite.²

Run 63

The reduced catalyst for Run 63 was transferred from the stainless steel drums in which it was received from Brownsville to the reactor in 50-pound batches, using sealed cans pressured slightly with cylinder nitrogen. During the loading into the reactor, natural gas was circulated at 500°F and 75 psig. Analysis of the circulated gas at the beginning of the loading showed 0.11 per cent free oxygen. After the loading, the oxygen content was too low to be detected.

After 18 hours the reactor pressure was increased to 120 psi with natural gas and then to 215 psi with hydrogen. The circulated mixture was maintained at approximately 45 per cent hydrogen at 700°F for 24 hours before the fresh feed was cut in. This

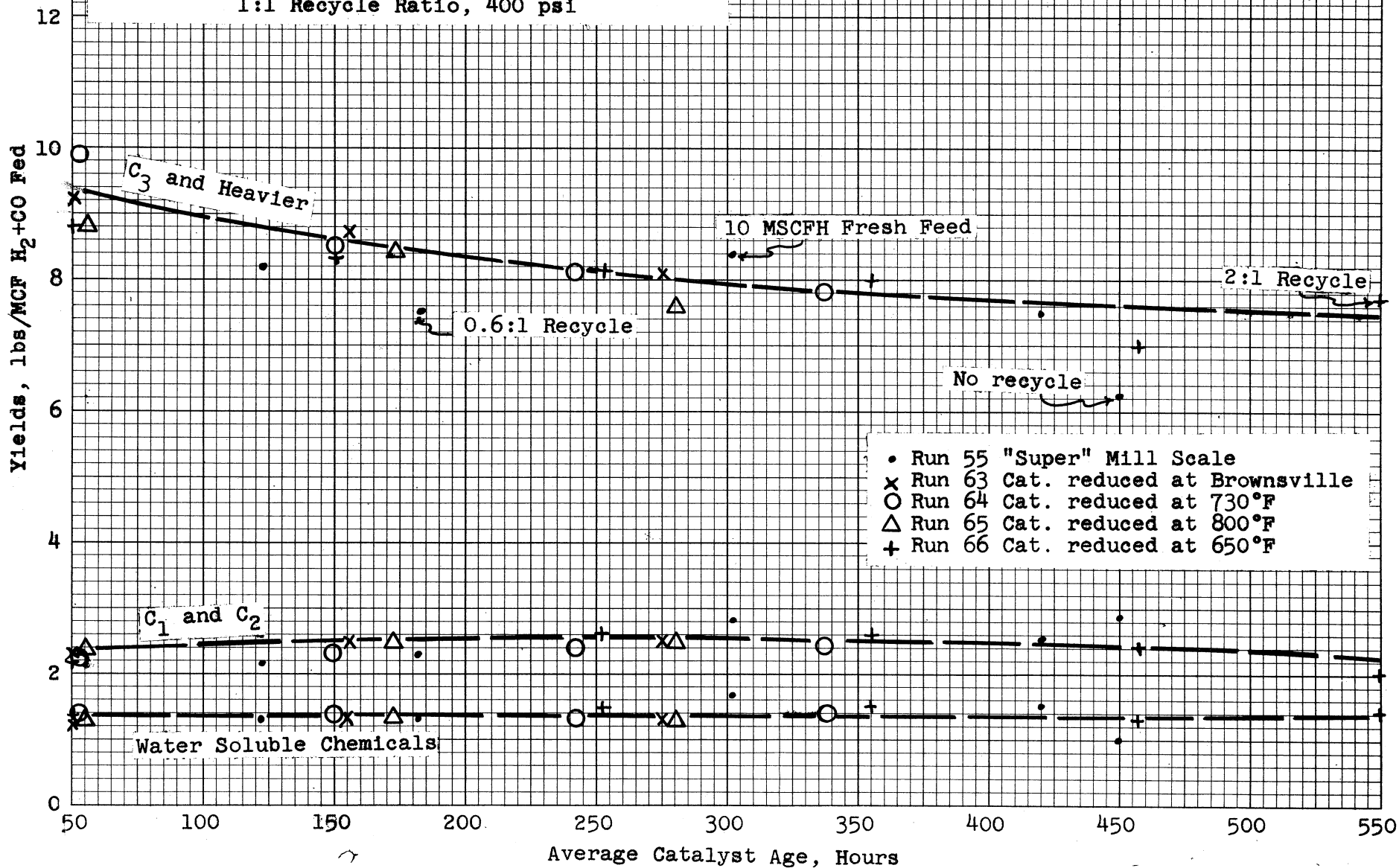
¹Reduction data are summarized in Tables IV, V, and VI in the Appendix. Analyses of catalysts are in the Appendix, Table III.

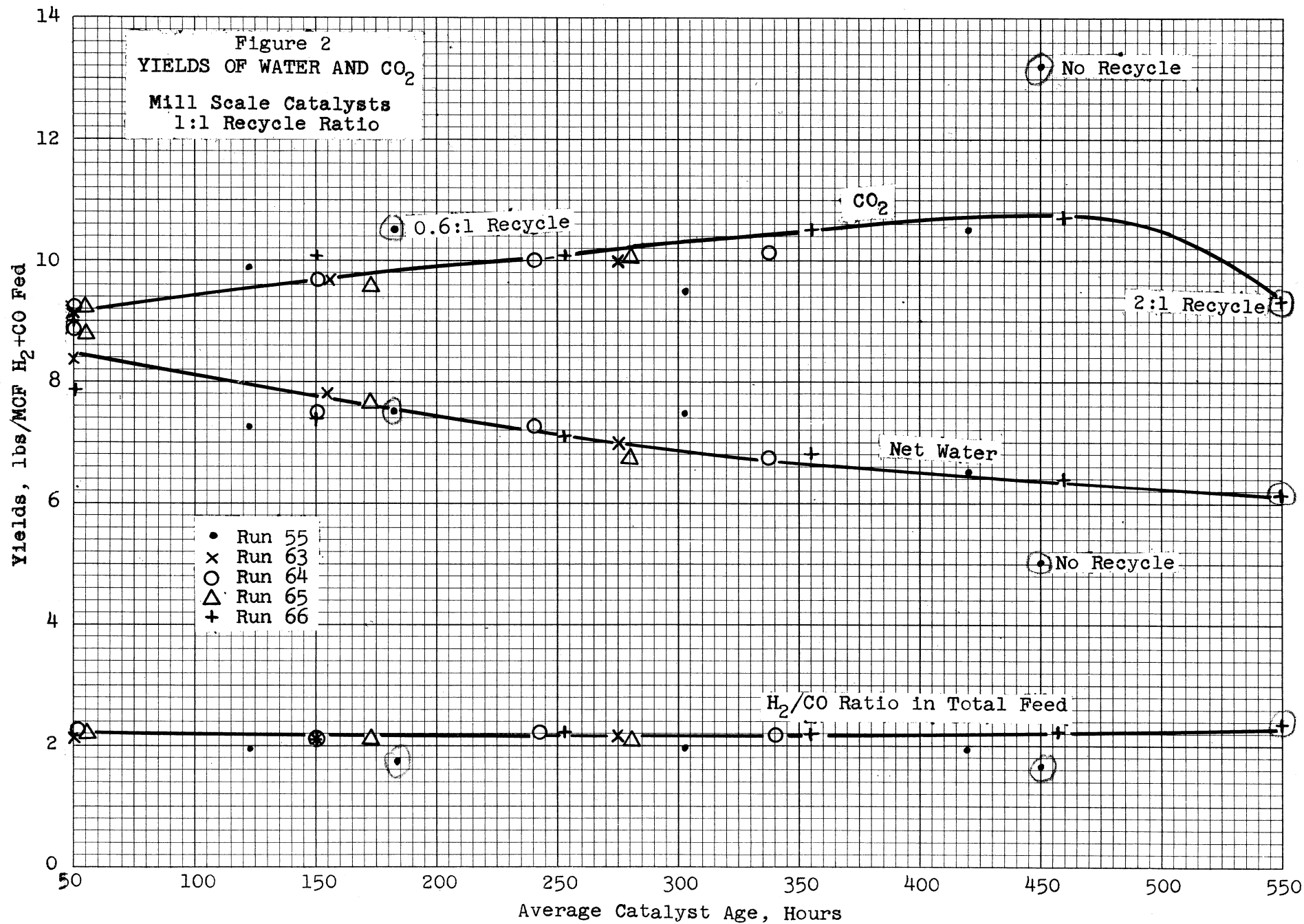
²Further details of the operating conditions are given in the daily average data sheets in the Appendix.

Figure 1

HYDROCARBON AND CHEMICALS YIELDS VS. CATALYST AGE

Mill Scale, 15 MSCFH Fresh Feed
1:1 Recycle Ratio, 400 psi





procedure was followed in order to duplicate as much as possible the Brownsville start-up practice.

The initial load of 2000 pounds of catalyst resulted in a 22-foot depth, which gradually declined to 19 feet during the run. The fresh feed rate was 16 MSCFH with a recycle-to-fresh-feed ratio of 1:1.

Runs 64, 65, and 66

These runs were made with catalyst base stock shipped from Brownsville but the reduction was carried out at various temperatures in the Montebello reactor. The general operating conditions were similar to those of Run 63. No make-up catalyst was added during any of the runs.

Between Runs 64 and 65 the line between the feed heater and the reactor was changed from carbon steel to 18-8 stainless steel to allow higher reduction temperatures.

Near the end of the Run 65, period J, 20 pounds of potassium carbonate was added to the approximately 2000 pounds of catalyst in the reactor in an effort to increase the yield.

During the terminal 119 hours of Run 66 the recycle/fresh feed ratio was increased from 1/1 to 2/1.