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PRELIMINARY UNEVALUATED MAP (1976) SHOWING AMOUNTS OF UPLIFT IN LOWER COOK INLET, ALASKA

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EXPLANATION

Contour lines, 1000-foot intervals.

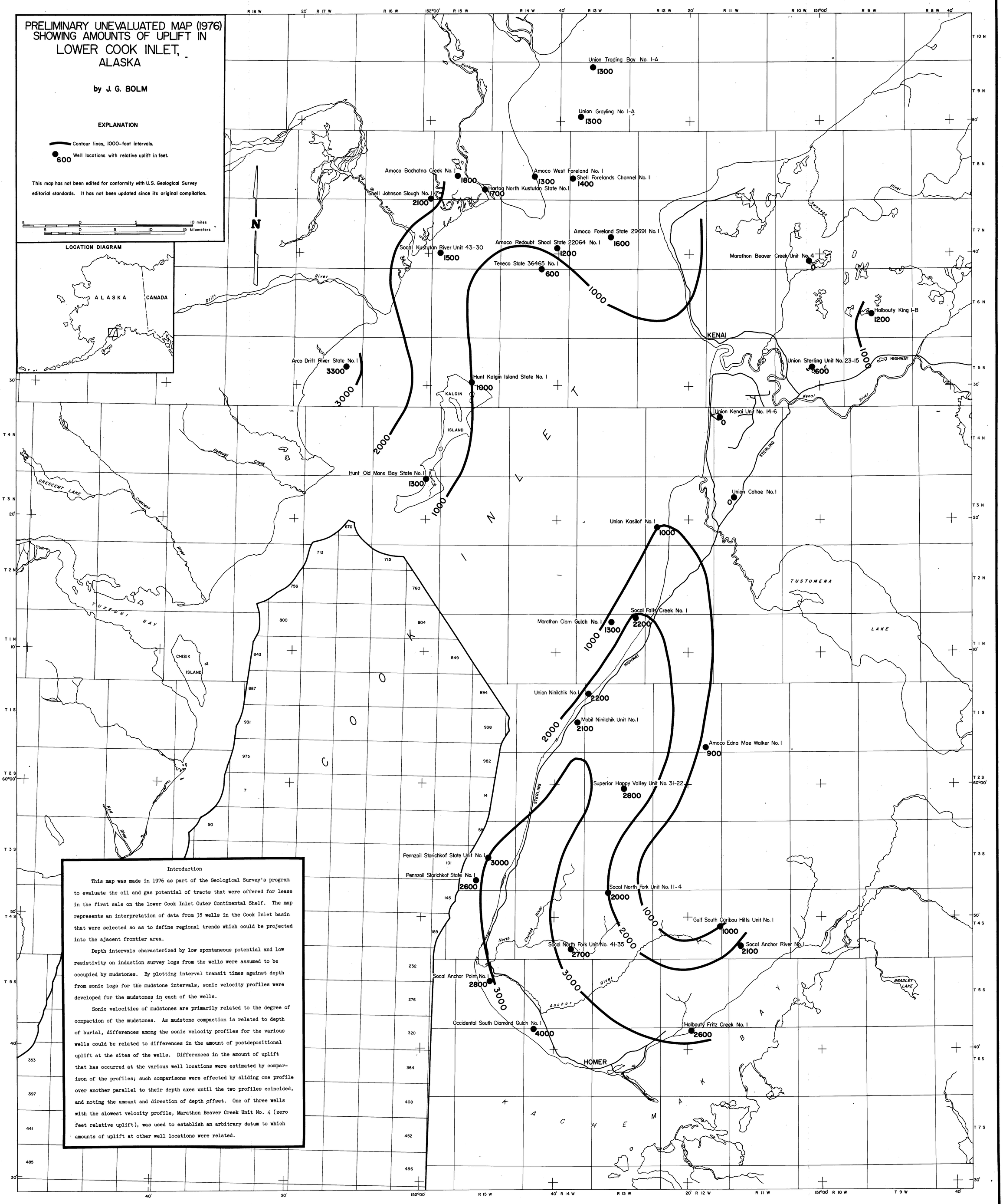
600 Well locations with relative uplift in feet.

This map has not been edited for conformity with U.S. Geological Survey editorial standards. It has not been updated since its original compilation.

5 0 5 10 miles
5 0 5 10 15 kilometers

LOCATION DIAGRAM

ALASKA CANADA



Introduction

This map was made in 1976 as part of the Geological Survey's program to evaluate the oil and gas potential of tracts that were offered for lease in the first sale on the lower Cook Inlet Outer Continental Shelf. The map represents an interpretation of data from 35 wells in the Cook Inlet basin that were selected so as to define regional trends which could be projected into the ajacent frontier area.

Depth intervals characterized by low spontaneous potential and low resistivity on induction survey logs from the wells were assumed to be occupied by mudstones. By plotting interval transit times against depth from sonic logs for the mudstone intervals, sonic velocity profiles were developed for the mudstones in each of the wells.

Sonic velocities of mudstones are primarily related to the degree of compaction of the mudstones. As mudstone compaction is related to depth of burial, differences among the sonic velocity profiles for the various wells could be related to differences in the amount of postdepositional uplift at the sites of the wells. Differences in the amount of uplift that has occurred at the various well locations were estimated by comparison of the profiles; such comparisons were effected by sliding one profile over another parallel to their depth axes until the two profiles coincided, and noting the amount and direction of depth offset. One of three wells with the slowest velocity profile, Marathon Beaver Creek Unit No. 4 (zero feet relative uplift), was used to establish an arbitrary datum to which amounts of uplift at other well locations were related.