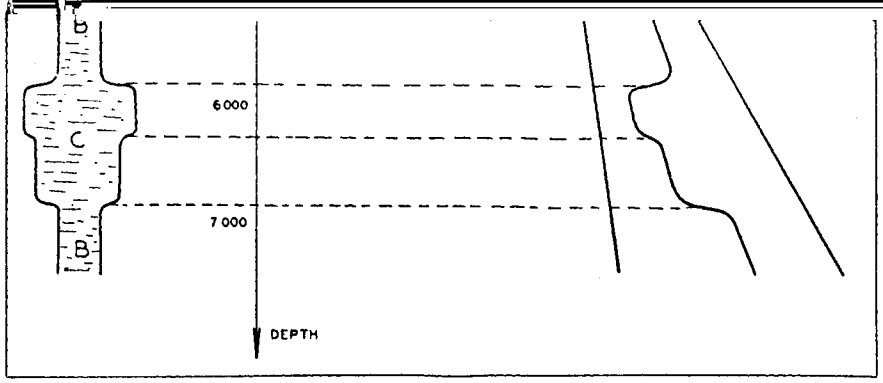



Figure 5-1. Principle of transitional method.

depth D is controlled primarily by the two following factors:

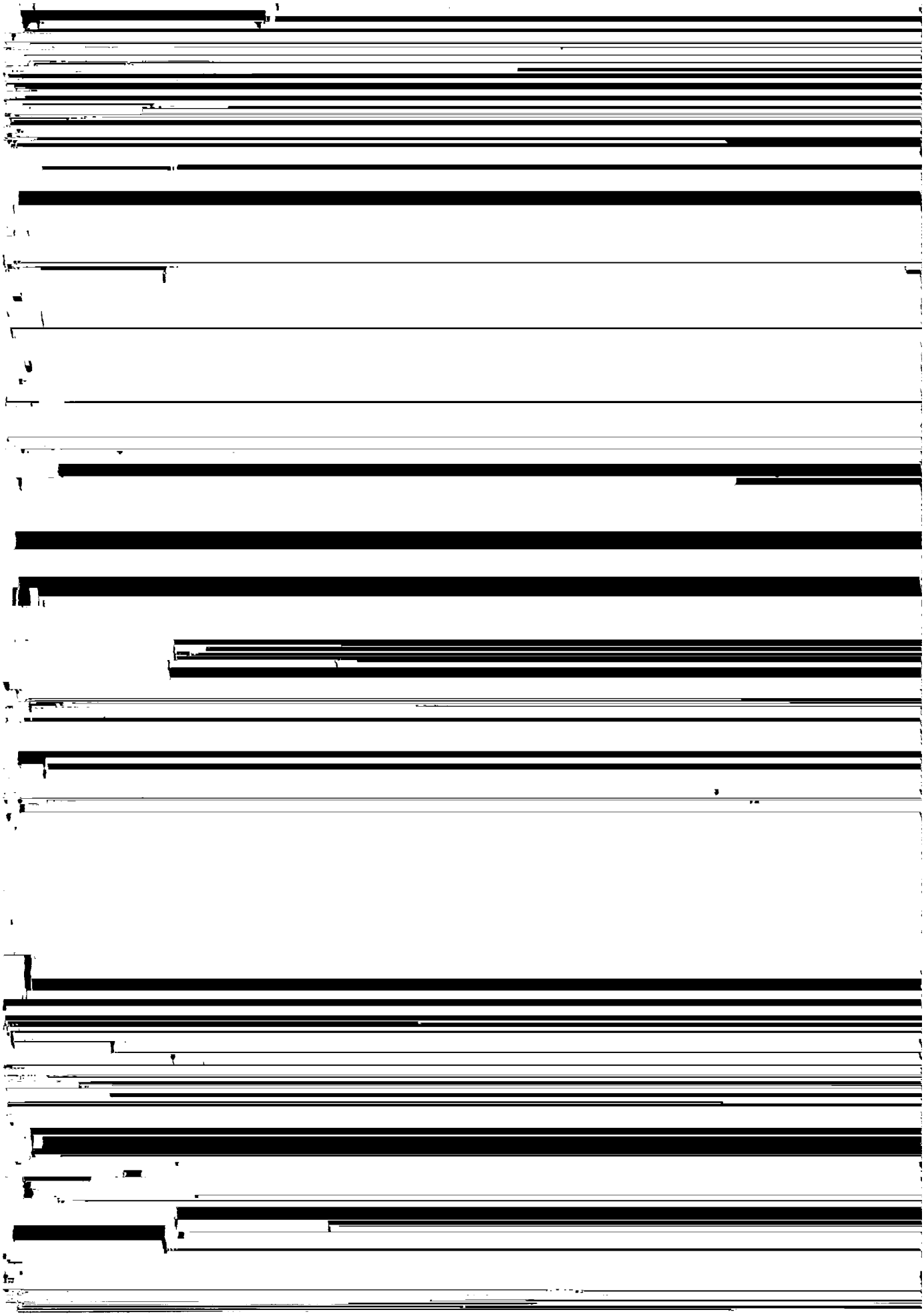
1. The temperature difference $T - T_F$ at point D,
2. The volume of mud situated at that particular depth.

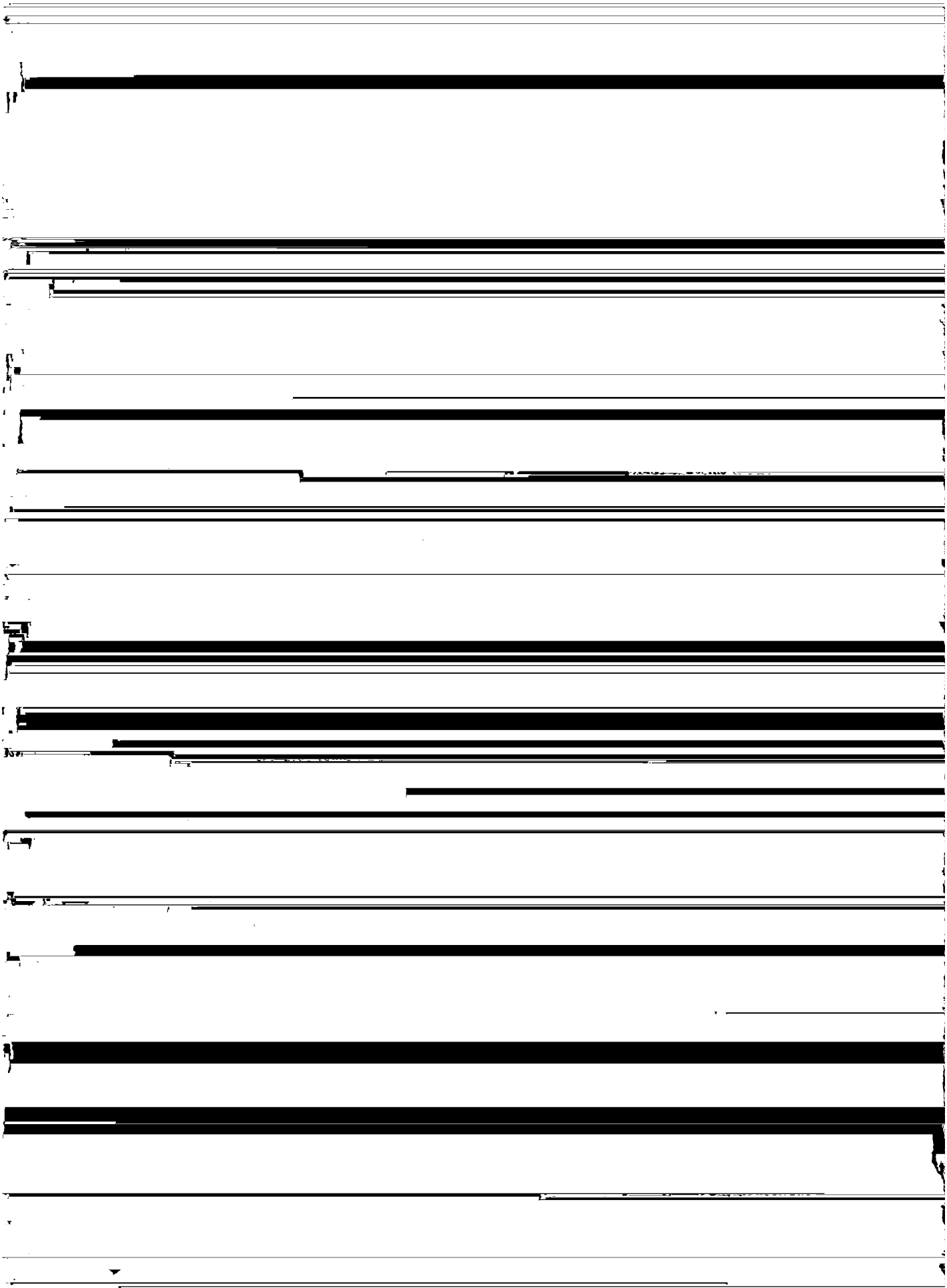
The difference $T - T_F$ is particularly great in the top section and in the bottom section of the hole. These sections will therefore exhibit the greatest and fastest temperature changes, while in the central section these will be much small-

**REFERENCES**

Fifth of a series of seven articles, which are based upon research work sponsored by Halliburton Oil Well Cementing Company. Preceding parts have appeared in THE OIL WEEKLY of October 21 and 28 and November 4 and 11.

Figure 5-2. Electric log, caliper log and temperature log from an Oklahoma Well.





tion, which is also greater for sands than for shales,

Figure 5-8. Approximate mud temperature graph in a rotary hole drilled at a relatively fast rate.

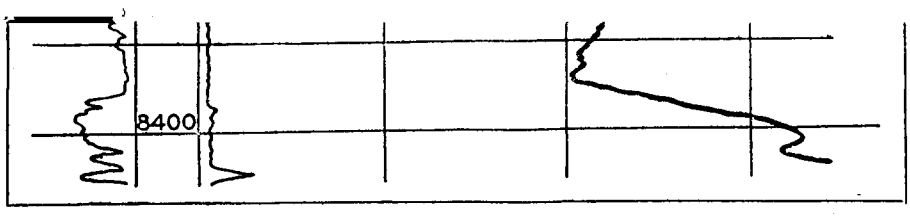



**Figure 5-10. Electric log and temperature log from a Lake Peigneur well (Louisiana Gulf Coast).**

well was still open, there is considerably more cement than where the hole was to gauge. Now, Portland Cement has a somewhat smaller heat conductivity than ordinary sediments (1 to 2 $\times$ $10^{-3}$C.G.S.). It will therefore impede to some extent the exchange of heat between the fluid in the hole and the formation outside. The greater the amount of cement, the slower will be this exchange of heat. In