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## LETTER

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### Rapid Index Tests for Transitional Materials

To the editor:

We thank Dr. Oakland for his letter<sup>1</sup> concerning our article published in the June 1983 issue of the *Geotechnical Testing Journal*<sup>2</sup> drawing to our attention the large amount of work done at Purdue. We agree with most of his points, but take issue with several. Those we take issue with arise largely because of our inability to express our thoughts clearly in the original paper. We will attempt to do so here.

There are two types of classification schemes: those used during on-site core logging or for rapid categorization of large amounts of materials and those used to directly assess the material properties for potential treatment or use. The latter are quantified laboratory measures; the former generally use visual and tactile qualitative measures supplemented by very simple field tests such as a pocket penetrometer test. Our static swell/slake index is of the rapid on-site type. We do not agree that on-site field classification requires numerical scales. Its purpose is to identify characteristic groups or types, which can then be subjected to more rigorous quantifiable tests.

None of the materials we are trying to classify are intended for con-

struction use or as products for industrial processes. In these cases, the extensive and expensive tests, such as the oedometer test on re-compacted material, or multicycle slake tests, are no doubt necessary. However, these tests do not fulfill the requirements for rapid, reproducible, economical field application to large volumes of intact core.

Our dynamic swell/slake test is intended as a simulation of a specific environment, that of a dredge/slurry pipeline operation; hence, lack of a screen is considered necessary. We used the Franklin-Chandra machine virtually intact specifically because it is commercially available, except for the Lucite chamber. (As an aside, Dr. Franklin now teaches here at the University of Waterloo).

Finally, we wish to point out that a major responsibility of the engineer is to effect economies for the client, without impairing prototype or product quality. Cheap quick tests are necessary to screen vast amounts of sample to identify groups deserving more careful study. Our tests are designed to aid in this screening effort. To directly quote our original paper,<sup>2</sup> "Other test procedures . . . provide more quantitative data and are potentially more useful in research projects. Once water susceptible materials are identified, more precise tests may be warranted." The intent is clear, but we wish to alter this statement to include construction projects, its omission having been an oversight on our part.

<sup>1</sup>Oakland, M. W., "Letter to the editor: Rapid Index Tests for Transitional Materials," *Geotechnical Testing Journal*, Vol. 7, No. 1, March 1984, p. 45.

<sup>2</sup>Dusseault, M. B., Cimolini, P., Soderberg, H., and Scafe, D. W., "Rapid Index Tests for Transitional Materials," *Geotechnical Testing Journal*, Vol. 6, No. 2, June 1983, pp. 64-72.

Maurice B. Dusseault  
Professor, Geological Engineering  
Department of Earth Sciences  
University of Waterloo  
Waterloo, Ontario, Canada N2L 3G1