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Bioremediation Effect on Shear Strength of Contaminated Soils

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Abstract : Soil contamination by oil industry is unavoidable issue; irrespective of environmental impact, which occurs during the process of soil contaminating and remediating. Effect of this phenomenon on the geotechnical properties of the soil has not been investigated thoroughly. Some researchers studied the environmental aspects of these phenomena more than geotechnical point of view. In this research, compaction and unconfined compression tests were conducted on samples of natural, contaminated and treated soil after 50 days of bio-treatment. The results manifest that increasing the amount of crude oil, leads to decreased values of maximum dry density and optimum water content and increased values of unconfined compression strength (UCS). However, almost 65% of this contamination terminated by using a Bioremer as a bioremediation agent. Foremost, as bioremediation takes place, values of maximum dry density, unconfined compression strength and failure strain increase.

Keywords : contamination, shear strength, compaction, oil contamination
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