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TITLE OF PROJECT: Valorization of Dredged Soil as a Highway Construction Material

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ABSTRACT (150-300 words):

In recent years, a large amount of sediment has been dredged from the Yamuna's connecting drains in Delhi during its maintenance. Due to its poor engineering properties, this soil is considered as waste. In order to properly meet the requirements of highway subgrade materials, an attempt has been made in this study to improve the strength, durability, and immobilize contaminants of the contaminated dredged soil collected from the Najafgarh drain by mixing it with different proportions of cement–bottom ash mix. Various tests were conducted on the contaminated dredged soil specimens, including the compaction test, the California bearing ratio test, the wet and dry test, the toxicity characteristic leaching procedure leachate test, and the scanning electron microscope test. The results showed that the cement-bottom ash mix enhanced the contaminated dredged soils' engineering properties. Additionally, compared to cement alone, the test results of the contaminated dredged soil stabilized with a cement–bottom ash mix were better. According to the study, 10% cement plus 10% bottom ash mix was the ideal additive ratio to improve the properties of the contaminated dredged soils and to use it as a highway subgrade fill material.

KEYWORDS: Contaminated soil, Stabilization, Bottom ash, Strength.

CATEGORY: Geotechnical Engineering