the dredged soil having acidity, thereby allowing the remediated dredged soil to be utilized as a resource.

[9] It is another aspect of the present to provide a method for neutralizing acid-washed dredged soil, in which coal fly ash and the like, that is, industrial byproducts from thermal power plants or the like are used as a neutralizer, thereby allowing low-cost and eco-friendly neutralization of the acid-washed dredged soil.

[10] It is a further aspect of the present invention to provide a method for neutralizing acid-washed dredged soil, in which coal fly ash is mixed with process water, followed by separation into a solid substance and a liquid substance, which can be appropriately used for neutralization of the acid-washed dredged soil and the process water, thereby allowing high-efficiency neutralization of the acid-washed dredged soil.

【Technical Solution】

[11] In accordance with one aspect of the present invention, there is provided a method for neutralizing dredged soil and used process water, which are resultants of a remediation step in which dredged soil contaminated with heavy metals is washed with an acid washing liquid, the method including: neutralizing the remediated dredged soil by adding a solid neutralizer to the remediated dredged soil in a solid phase, followed by mixing; and neutralizing used process water having been used in acid washing treatment by adding a liquid neutralizer to the used process water in a liquid phase, followed by mixing, wherein the solid neutralizer is coal fly ash (CFA) as byproducts of a coal combustion process , wherein the liquid neutralizer is prepared by mixing the solid neutralizer with clean process water, followed by separating a solid substance from the mixture , and wherein the solid neutralizer is used in an amount of 2 wt% to 6 wt% based on the weight of the remediated dredged soil , and the liquid neutralizer is used in an amount of 90 vol% to 150 vol% based on the volume of the used process water.

[12] The solid neutralizer may be coal fly ash (CFA) as byproducts of a coal combustion process.

[13] Reaction time in the neutralization step carried out by mixing the remediated

dredged soil with the solid neutralizer may range from 0.5 to 1 hour. The solid neutralizer may be used in an amount of 2 wt% to 6 wt%, specifically 2 wt% to 3 wt%, based on the weight of the remediated dredged soil.

[14] The liquid neutralizer may be prepared by mixing the solid neutralizer with clean process water, followed by separating a solid substance from the mixture. Here, a weight-based mixing ratio of the solid neutralizer to the clean process water may

【CLAIMS】

【Claim 1】

A method for neutralizing dredged soil and used process water, which are resultants of a remediation step in which dredged soil contaminated with heavy metals is washed with an acid liquid, the method comprising:

neutralizing the remediated dredged soil by adding a solid neutralizer to the remediated dredged soil in a solid phase, followed by mixing; and

neutralizing used process water having been used in acid washing treatment by adding a liquid neutralizer to the used process water in a liquid phase, followed by mixing,

wherein the solid neutralizer is coal fly ash (CFA) as byproducts of a coal combustion process,

wherein the liquid neutralizer is prepared by mixing the solid neutralizer with clean process water, followed by separating a solid substance from the mixture , and

wherein the solid neutralizer is used in an amount of 2 wt% to 6 wt% based on the weight of the remediated dredged soil , and the liquid neutralizer is used in an amount of 90 vol% to 150 vol% based on the volume of the used process water.

【Claim 2】

The method according to claim 1, wherein reaction time in the neutralization step carried out by mixing the remediated dredged soil with the solid neutralizer ranges from 0.5 to 1 hour.

【Claim 3】

The method according to claim 1, wherein a weight-based mixing ratio of the solid neutralizer to the clean process water ranges from 1:90 to 1:120.

【Claim 4】

The method according to claim 1, wherein the solid substance separated to

prepare the liquid neutralizer is reused as the solid neutralizer.

【Claim 5】

The method according to claim 1, wherein a weight ratio of the separated solid substance to the liquid neutralizer ranges from 1:90 to 1:120.

【Claim 6】

The method according to claim 1, wherein reaction time in the neutralization and precipitation step carried out by mixing the used process water with the liquid neutralizer ranges from 5 to 10 minutes.

【Claim 7】

The method according to claim 1, further comprising:

a strength enhancement step in which strength of the dredged soil is enhanced, after the neutralization step carried out by mixing the remediated dredged soil with the solid neutralizer.

【Claim 8】

The method according to claim 7, wherein, in the strength enhancement step, the dredged soil neutralized in the neutralization step is mixed with coal bottom ash (CBA) as byproducts of a coal combustion process.

【Claim 9】

The method according to claim 1, wherein the neutralization step carried out by mixing the used process water with the liquid neutralizer comprises a precipitation step in which contaminants to be discarded are precipitated from the mixture of the used process water and the liquid neutralizer.