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A Colorimetric Microwell Method for Determining Bromide Concentrations in Tracer Studies.

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Bromide (Br⁻) is commonly used as a tracer in studies of water, chemical and microorganism transport in soil and rock because it is relatively nonreactive with soil and rock constituents and because of its low environmental background concentrations. Based upon a largely ignored modification of the standard colorimetric method for determining bromide using phenol red and chloramine-T, we correct an internal error and recast the technique for use with 96-well microplates. Furthermore, the addition of thiosulfate to quench the undesirable chlorination reaction as previously published is shown to be unnecessary and even detrimental following the use of ammonium to produce chloramine from excess chlorine species. By manipulating sample size and concentrations of phenol red and chloramine-T, the concentration range can be expanded from 12 mg L⁻¹ Br⁻ to much as 300 mg L⁻¹ Br⁻.

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