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Defluoridation Technique Based on Optimization of CaCl_2 Dosage

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Abstract : Based on an $\text{MgO-CaCl}_2\text{-CaO-HCl}$ defluoridation system, and series experiments were performed to determine the optimum dosage of CaCl_2 by Groundwater fluoride removal from local fluoride contaminated water filter. The permissible limits of various water quality parameters have within the limits while determining the best possible dose. Using 6 ml of 7.5 % CaCl_2 /lit produce a residual F^- concentration of 0.53 ppm in the HCl treated pH adjusted water, this is lower concentration of residual F^- . However, lower dosage of CaCl_2 at 3 ml/lit. CaCl_2 was chosen to reduce the cost of operation. Notice, that the TDS value of HCl treated pH adjusted water at the optimum dosage of 3.0 ml of 7.5 % CaCl_2 soln. is 1380.0 ppm, an increase of 170.0 ppm as compared to 1210.0 ppm in raw water.

Key words : Groundwater, Fluoride, CaCl_2 , Defluoridation

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