

CHAPTER 14

REMOVAL Pb (II) FROM WELL WATER IN PASURUAN CITY USING THE CATION EXCHANGER PROCESS

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1. Introduction

In human life, clean water is a need that must be fulfilled. Well, water has the potential to be used as clean water. Previous research indicated that several well water samples in the city of Pasuruan contained Pb (II) ions of 0.15 - 0.23 mg/L [1]. The maximum Pb (II) ion content for clean water is 0.05 mg/L [2]. Pb accumulation in the human body at certain levels will endanger human health [3]. Pb exposure can lead to hyperthyroidism and osteoporosis in women. Pb following the blood flow will settle and join the bone matrix. Pb accumulation in the human body can interfere with activity, growth, metabolism, or reproduction [4]. For the well water used by the community to meet the clean water requirements, it must be treated first. This treatment is intended to reduce the Pb (II) ion content in well water. Several studies have been carried out to reduce the Pb (II) ion content in water. The methods used to reduce Pb (II) ions include evaporation, ion exchange, adsorption, flocculation, electrodialysis, solvent extraction, coprecipitation, and chelation therapy [2][5]. Pb (II) ions can be reduced by activated carbon. In the cation exchanger method, Pb (II) ions can be reduced with synthetic resins, which have high selectivity [6].