We have investigated the extended phosphorus diffusion gettering (PDG) effect on chromium impurities (Cr) in p-type multicrystalline silicon (mc-Si) grown by Heat Exchanger Method (HEM). The study was made after phosphorous diffusion and according to different extended annealing temperatures. The secondary ion mass spectrometry (SIMS) analysis revealed a significant accumulation of 52Cr in heavily phosphorus doped (HPD) region. Using quasi-steady state photoconductance (QSSPC) technique, the apparent lifetime dependent minority carrier density curves have been obtained. The results showed an increment of the bulk minority carrier lifetime for specific annealing temperatures. Appropriate calculations based on QSSPC results allowed us to determine the lifetime curves associated to gettered impurities. Their fitting by Shockley-Read-Hall (SRH) model reveal that the origin of the lifetime increment is the reduction of interstitial chromium (Cri) density in the bulk. Furthermore, the estimation of electron to hole capture cross-section ratio (k=σn/σp) through the modelling of apparent lifetime curves using Hornbeck–Haynes model, confirmed the effectiveness of Cri gettering and identified the nature of dominant recombination centres after gettering process