

GROUNDWATER POLLUTION BY DISPOSAL OF DOMESTIC SEWAGE WITH METHODOLOGICAL INNOVATION IN THE PROCESS OF INFILTRATION OF EFFLUENT, IN SALESÓPOLIS - SP - BRAZIL

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The municipal district of Salesópolis is located in the eastern of the São Paulo City. Most of its area (98%), situated in the source of Tietê River, is protected by Lei de Proteção de Mananciais. A methodology for treatment of domestic sewage was developed for this municipal district, using a primary facultative pond, followed by infiltration in unsaturated soil. Three pilot systems were installed in area: one of them conventional (infiltration in sub-surface), other non-conventional (infiltration in layer of located gravel above the land) and a third conjugating the two previous. In the non-conventional system some modifications were made with relation to the establishment of PVC pipes, that were placed on a gravel bed, in order to increase the transit time of the effluent in the surface, by this way favoring the evaporation of part of the percolated, what is not considered in the conventional methods of sewage treatment by infiltration. This new methodological conception considers the method of potential evaporation, in way to decrease the amount of effluent to be infiltrated. The aim this methodology is minimizing or even to eliminate the pollution of the phreatic aquifer, and avoid a serious problem for the public health. According to chemistry analyses of the monitoring wells installed in the three systems, it is intended to evaluate the detailed control of the transport of the organisms (bacteria and virus) and to propose more realistic improvements in the effective environmental legislation.