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REVIEW PAPER ON WATER SUPPLY MANAGEMENT FOR CONSTRUCTION SITE

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Abstract: **- One of the problems for water supply systems with intermittent supply is the peak flow produced at some hours of the day, which is usually much larger than that in a system with continuous supply. The main consequence is the reduction of pressure and flow at the ends or highest points of the system network. This in turn generates in equity in water supply and complaints from users. To reduce the peak flow, some sectors of the system must be assigned a different supply schedule. As a result, the supply curve is modified and the peak flow is reduced. This reorganization seeks some optimal allocation schedule and must be based on various quantitative and qualitative technical criteria. Irregular timing of Garbage collector van is also big issues in metropolitan city.to reduce this kinds of problems proper scheduling is required. In order to achieve the above mentioned objectives and solve the structural and operational problems listed above, PMC has decided to undertake a radical and comprehensive approach which clearly defined the main concepts to be developed in the present project this solution does not seek perpetuating intermittent water supply. On the contrary, this methodology can be a useful tool in gradual transition processes from intermittent to continuous supply.**

Keywords: *Water supply schedule, Optimization.*

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I INTRODUCTION

Issuing drinking water construction permits is the responsibility of the Iowa Department of Natural Resources (DNR), specifically the Water Supply Engineering Section. A public water supply construction permit must be obtained from DNR prior to the construction or modification of any source, treatment, and storage or distribution system of a public water supply. The construction permitting process applies to all projects. However, financing a project through programs involving federal funds, such as Community Development Block Grants, the Drinking Water State Revolving Fund (DWSRF), or Rural Development, can add other requirements. This manual also discusses in detail the requirements of the DWSRF program and notes how the loan process interfaces with the construction permitting process. If other financing programs are used, the applicant should work with those program managers to determine additional requirements.

II. STATE OF DEVELOPMENT

Subhra Chakravarty[1] In countries like India, with an ever-increasing demand for water, the importance of rainwater harvesting and groundwater recharge cannot be overemphasised. With this background in view, the laboratories of the Council of Scientific & Industrial Research have developed and demonstrated various technologies for the enhancement of recharge through various means. These are: the use of injection bore holes in hard rock; recharge through tanks wells; siphon recharge; enhancement of run off through treatment of catchment with polyamine material; use of chemicals for control of evaporation and also for stabilising and sealing of soil through hydrophobic chemicals, etc. This paper attempts to consolidate the experiences gathered in respect of the case studies in various rainfall regions with different soil characteristics.

H. Hashemi1, R. Berndtsson[2] Estimating the change in groundwater recharge from an introduced artificial recharge system is important in order to evaluate future water availability. This paper presents an inverse modeling approach to quantify the recharge contribution from both an ephemeral river channel and an introduced artificial recharge system based on floodwater spreading in arid Iran. The study used the MODFLOW2000 to estimate recharge for both steady- and unsteady-state conditions.

Leena Singh[3] Ground water plays a crucial role in the country in increasing food and agricultural production, providing drinking water and facilitating industrial development. Ground water meets nearly 55% of irrigation, 85% of rural and 50% urban and industrial water needs. In most of the states the ground water extraction has exceeded annual recharge and water table has gone down. The growing needs of population and urbanization have generated an urgency to evolve innovative methods for holding up of the ground water resources through appropriate recharge activities

Debu Mukherjee A [4]. Artificial groundwater recharge is as a process of induced replenishment of the ground water reservoir by human activities. It is the planned, human activity of augmenting the amount of ground water available through works designed to increase the natural replenishment or percolation of surface water into the groundwater aquifers, resulting in a corresponding increase in the amount of groundwater available for abstraction. The primary objective of this technology is to preserve or enhance groundwater resources in various parts of India which includes conservation or disposal of floodwaters, control of saltwater intrusion, storage of water to reduce pumping and piping costs, temporary regulation of groundwater abstractions, and water quality improvement by dilution by mixing with naturally-occurring groundwater (Asano, 1985).

Mahati Kavuri [5] artificial recharge of aquifer is the process of adding water to an aquifer through human effort. The main purpose of artificial aquifer recharge is to store water for later use while improving upon the quality of water. This paper will review the existing methods of artificial recharge of aquifers such as infiltration basins and canals, water traps, cut waters, surface run off drainage wells, and diversion of excess flow from irrigation canals etc with the help of various case studies conducted in the recent past at various places.

Amartya Kumar Bhattacharya [6] due to over-exploitation of groundwater, decline in groundwater levels resulting in shortage of supply of water, and intrusion of saline water in coastal areas have been observed. In such areas, there is need for artificial recharge of groundwater by augmenting the natural infiltration of precipitation or surface-water into underground formations by methods such as water spreading, recharge through pits, shafts, wells et cetera The choice of a particular method is governed by local topographical, geological and soil conditions; the quantity and quality of water available for recharge; and the technological-economic viability and social acceptability of such schemes. This paper discusses various issues involved in the artificial recharge of groundwater.

Berenice Lopez Mendez [7] Aquifer recharge occurs naturally through infiltration mechanisms. However, due to changes in the vegetation cover and consequently increasing soil erosion, infiltration rates tend to decrease. The recharge of an aquifer can be managed by facilitating natural infiltration processes and/or by the construction of structures that maintain recharge artificially. Several methods are available to enhance the recharge of an aquifer. The implementation of aquifer recharge schemes can massively increase groundwater levels, which is the best possible long term storage. Recharge can also help to address objectives such as improvement of source water quality, recovering of yields, creation of barriers to prevent saline intrusions and/or other contaminants, prevention of land subsidence, reducing potentially harmful runoff of storm water.

SudhaVenu Menon [8] this context the present article attempts to analyze the need for sustainable ground water management in India. The article also briefly discusses the concept of sustainable ground water management, factors affecting ground water availability, different approaches towards developing and using available ground water without adversely affecting the hydro-geological balance. Further, the paper highlights strategies for sustainable groundwater management, including development of aquifers, rainwater harvesting and artificial recharge methods. The article offers some relevant policy recommendations for sustainable groundwater management in India.

Makoto kitou [9] in this study, the comparison between mulching and non-mulching is carried in a 5set of pot for each mulch and non-mulch. Degradable material – air dried plant residue, mugwort, plume –grass and soybean are used for mulching. The chemical properties of soil before and mulching are tested. The decomposition rate in the mulched pot is increasing and the soil properties are becoming more effective than non-mulched pots.

Junaid N. khan [10] Field experiments were conducted in semi-arid regions for 2 years to evaluate an efficient irrigation schedule for guava under mulch and non-mulch conditions. Soil matric potential irrigation amount soil water content and fertilize content were measured as well as Eva transpiration. Obtained results were drainage losses from 9.5 to 17.1% under different soil matric potential under non mulch conditions. Results of this study suggest that in sandy loamy soil leaching losses and fertilizers' uptake are driven by amount of water application.

M.S.Burgers [11] in present study, four irrigation treatments was tested on both mulched and unmulched plots for a 3 season. Watering is done with sprinkle and an evaporation pan is situated near the site to record evaporation rate. Threshold wheat straw is used as mulch. The potato tuber yield consistently responded favorable to mulching

III. CONCLUSION

This paper focuses only on the literature review of previously published studies. The findings of this paper is the growing needs of population and urbanization have generated an urgency to evolve innovative methods for holding up of the ground water resources through appropriate recharge activities. This paper discusses various issues involved in the artificial recharge of groundwater. The implementation of aquifer recharge schemes can massively increase groundwater levels, which is the best possible long term storage. Recharge can also help to address objectives such as improvement of source water quality, recovering of yields, creation of barriers to prevent saline intrusions and/or other contaminants, prevention of land subsidence, reducing potentially harmful runoff of storm water.

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