Study of Physico-chemical and Biological Water Quality of River Ken in District Banda

M. K. Gupta and G.S. Gupta
Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Pollution Research Laboratory, Department of Energy and Environment, Faculty of Science and Environment, Chitrakoot-485 780, Satna

Most of the water samples were found to have total hardness and turbidity values more than their permissible level. The high values of these parameters may have health complications and, therefore, they need attention. The present study was designed to analyze water of river Ken for various physico-chemical and biological characteristics in terms of mass bathing impact at winter, summer and rainy seasons (year 2012). Many lacks of pilgrims came in the festival and took holy dip in the river Paiswani (Mandakini Ganga). Thus mass bathing affected the quality of river Paiswani (Tiwari and Chaturvedi, 2011). It was observed that, total coliforms, TDS, total hardness, BOD, DO and total alkalinity had significant change due to mass bathing activities. However, pH was not significantly affected. The parameters estimated were colour, temperature, odour, turbidity, pH, EC, calcium hardness, total hardness and chloride. Analysis of the above parameters was carried out using standard methods for examination of water and wastewater. The results compared with drinking water quality standards prescribed by Bureau of Indian Standards and WHO. Values of all the selected parameters were found beyond the permissible limit of the prescribed standards. Extreme water pollution was noticed on main season of summer.

KEYWORD
Surface water, Physico-chemical and biological water quality, Trace elements.

AUTHOR
1. Mr. M.K. Gupta, Research Scholar, Department of Energy and Environment, Faculty of Science and Environment, Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot- 485 780, Satna.

2*. Dr. G.S. Gupta, Associate Professor, Department of Energy and Environment, Faculty of Science and Environment, Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot- 485 780, Satna.
Assessment of Groundwater Quality Trends and Sea-water Intrusion in Chennai City- A Case Study

A. Annapoorani, A. Murugesan, A. Ramu and N. G. Renganathan
Sriram Engineering College, Department of Chemistry, Chennai-602 024

Groundwater samples were collected with the scope of interference of saltwater on groundwater from Chennai city by once in a month in the year of 2012. The physico-chemical analyses were carried out using the standard recommended procedures. From the result evaluation, the difference in TDS with cations and anions reveals that sodium is the major cation and chloride is the major anion. A trend of TDS with bicarbonate / chloride ratio shows that 25% of the samples brackish and 50% of the sample were brackish. A linear saturation index value shows the high corrosiveness. Intrusion of salt water has been assessed on the basis of ionic ratio with respect to total dissolved solids. All the above studies conclude that most of the sampling stations were indicates the seawater intrusion.

KEYWORD
Groundwater quality assessment, Seawater intrusion, Chennai city, Corrosivity ratio, GIS.

AUTHOR
1. Mr. A. Annapoorani, Assistant Professor, Department of Chemistry, Vel Tech Multi Tech Dr RR, Dr. S.R. Engineering College, Avadi, Chennai-600 062.

2*. Dr. A. Murugesan, Professor and Head, Department of Chemistry, Sriram Engineering College, Perumalpattu, Chennai-602 024.

3. Dr. A. Ramu, Professor and Head, School of Chemistry, Madurai Kamaraj University, Madurai – 625 021.

4. Dr. N.G. Renganathan, Professor, Department of Chemistry and Dean of Research Centre, Vel Tech Dr RR, Dr. S.R. Technical University, Avadi, Chennai - 600 062.
Assessment of the Physico-chemical Status of Ground Water From Some Selected Open Wells in Bhimavaram Town, West Godavari District

Jhansilakshmi and E.U.B. Reddi
Andhra University, Department of Environmental Sciences, Visakhapatnam

Physico-chemical analysis of open well water samples was carried out from 14 sampling sites in Bhimavaram town of Andhra Pradesh for the month of October 2013. The parameters determined heavy metals, such as Al, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Cd, Hg, Pb and U using (ICP-MS) spectrometry. Ancillary data included pH and electric conductivity. The concentrations of V, Cr, Mn, Co, Ni, Cu, Zn, As, Cd and U were below detectable limit. The correlation coefficients were calculated for water quality assessment. The relative concentration of the trace metals in open well water observed in the sequence of Fe>Hg>Pb>Al. The results showed that out of 14 wells, 4 of them were strongly polluted, but they require certain levels of treatment before use.

KEYWORD
Water quality, Ground water, heavy metals, Al, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Cd, Hg, Pb, U.

AUTHOR
1. Ms. Jhansilakshmi, Research Scholar, Department of Environmental Sciences, Andhra University, Visakhapatnam.

2*. Dr. E.U.B. Reddy, Senior Professor, Department of Environmental Sciences, Andhra University, Visakhapatnam.
Assessment of Water Quality Index for the Groundwater in Downstream Side of the Kalingarayan Canal, Erode District

T. Mohanakavitha, T. Meenambal and R. Radhika
Government College of Technology, Department of Civil Engineering, Coimbatore- 641 013

The present work is aimed at assessing the water quality index (WQI) for the groundwater in downstream side of the Kalingarayan canal, Erode district, Tamil Nadu. This has been determined by collecting groundwater samples at the time of flow in the canal and also at the time of non flow in the canal and subjecting the samples to a comprehensive physico-chemical analysis. For calculating the water quality index, 10 critical parameters have been considered: pH, total hardness, calcium, magnesium, bicarbonate, chloride, total dissolved solid iron, sulphate and nitrate. The study showed that all water samples were within the standard permissible limit prescribed by WHO and ISI standards for irrigation. The WQI for these samples ranged from 69.05 and 91.77. The analysis reveals that the ground water at the time of flow, non flow, can be considered fit for human consumption and irrigation.

KEYWORD
Ground water, WQI, Pollution.

AUTHOR
1. Mr. T. Mohanakavitha, Assistant Engineer, Tamil Nadu Police Housing Corporation Ltd., Chennai.

2*. Dr. T. Meenambal, Professor, Department of Civil Engineering, Government College of Technology, Coimbatore- 641 013.

3. Ms. R. Radhika, Post Graduate Student, Division of Chemical Engineering, Government College of Technology, Coimbatore- 641 013.
Status of Ground Water Quality Near Municipal Solid Waste Dumping Site Satna

Vandna Pathak, Sadhana Chaurasia and B. P. Kushwaha
Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Faculty of Science and Environment, Chitrakoot-485 780 Satna.

The paper deals with status of ground water quality at vicinity of municipal solid waste (MSW) dumping site. For present study, the 4 ground water samples were collected 4 times in a year (for 2 year) in different seasons, like post monsoon, winter season, pre monsoon season and monsoon season within the 500 m radius from MSW dumping site and were analysed for pH, TDS, conductivity, alkalinity, hardness, chloride, sulphate and different metals, like Fe, Cr, Ni, Zn, Pb, Mn and Cu according to standard methods. All the analysed results were within permissible limit in both the year and in all the season. Water was potable but the alkalinity of all the sampling station in both the year was towards higher range. In sampling sites alkalinity was in the range from 257.0 to 440 mg/L. And this higher alkalinity range could damage the food production and also it has adverse effect on soil and water. As high alkalinity tend to increase the sodium content and higher amount of sodium in the soil leads to a change in SAR ratio, which results in soil salinity problem and it also reduces the soil permeability and pose a great hindrance for vegetation and agriculture and causes disfunctioning of kidneys and heart ailments.

KEYWORD
Water, Quality, MSW, Municipality.

AUTHOR
1. Dr. Vandna Pathak, Associate Professor, Faculty of Science and Environment, Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot- 485 780, Satna.

2. Dr. Sadhana Chaurasia, Associate Professor, Faculty of Science and Environment, Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot- 485 780, Satna.

3*. Dr. B.P. Kushwaha, Associate Manager, Environment Department, GMR Chhattisgarh Energy Ltd., Raipur.
Study on Statistical Relationship between Groundwater Quality Parameter of Karayanchavadi region in Chennai

K. Dhanasekar and P. Partheeban
St.Peter’s College of Engineering and Technology, Avadi, Chennai 600 054

The present study deals with statistical analysis of physico-chemical parameter of groundwater quality of Karayanchavadi region in Chennai. The groundwater quality has been assessed by using Pearson correlation coefficient method. Correlation coefficients were determined to identify the highly correlated and interrelated water quality parameters. Regression equations relating these identified parameters were formulated. The developed regression equations in the study can be used for monitoring water quality by observing identified parameter which reduce time and cost as well.

KEYWORD
Correlation coefficient, Groundwater quality, Karayanchavadi region, Regression analysis.

AUTHOR
1. Mr. K. Dhanasekar, Research Scholar, Department of Civil Engineering, Jawaharlal Nehru Technology University, Hyderabad and Associate Professor, MNM Jain Engineering College, Chennai.

2*. Dr. P. Partheeban, Dean Academic, St. Peter’s College of Engineering and Technology, Avadi, Chennai- 600 054.
Studies on Seasonal Variation in Physico-chemical Parameter of Water and Zooplankton Community of the Godavari River in Nasik City

P.M. Nalawade, N.A. Patil, A.D. Bholay and M.B. Mule
K.T.H.M. College, Department of Environmental Science, Nasik-422 002

The present investigation deals with the zooplanktons together with water quality of Godavari river, in Nasik city, Maharashtra. This investigation was undertaken for a period of 10 month, that is from June 2012 to March 2013. The river Godavari is a mainly contaminated with untreated sewage and industrial effluents, while flowing through Nasik city. The samples collected from the site II and III reveals that, the parameters, such as BOD, COD, phosphate, nitrate, Zn, Fe, Cu and DO at were found above permissible limits at discharge zone which indicates increase in organic pollution. The discharge zone is dominated by pollution tolerant zooplankton species, such as rotifera, cladocera, copepoda and oligocheata. In studied samples 21 rotifers, 4 protozoan’s, 5 copepods and 3 cladocerans were reported. The assessment of the water quality and zooplankton occurrence may help in the better management of Godavari river pollution in future.

KEYWORD
Zooplankton, Domestic sewage, Pollution, Godavari river.
Some Studies on the Impact of On-Site Sanitation Systems on Ground Water Quality Through Water Quality Index

M. Murali, M.V.S. Raju and N. Srinivas
Vignan University (VFSTRU), Department of Civil Engineering, Vadlamudi-522 213

In the present study, an attempt has been made to investigate the degree of pollution of ground water due to on site sanitation in Jodugullapalem slum area of Visakhapatnam of Andhra Pradesh. Surveys were conducted physically for selection of sampling sites in study area. Ground water samples exposed to sewage of on-site sanitation system collected seasonally for analysis. The water samples were analyzed for physico-chemical characteristics, such as pH, EC, nitrate, chloride. The data obtained were subjected to correlation analysis for statistical treatments. Water quality indices for ground water samples of study area were calculated to assess its portability and to summarize large amount of water quality data into simple terms.

KEYWORD
Physico-chemical characteristics, Jodugulla- palem, On-site sanitation, Water quality index.

AUTHOR
1*. Dr. M. Murali, Professor and Head, Department of Civil Engineering, Vignan University (VFSTRU), Vadlamudi-522 213.

2. Dr. M.V.S. Raju, Professor, Department of Civil Engineering, V.R. Siddhartha Engineering College, Vijayawada-520 007.

3. Dr. N. Srinivas, Professor, Department of Environmental Studies, GITAM University, Visakhapatnam-530 045.
RECYCLING OF TEXTILES: A DIRE NEED FOR PROTECTION OF ENVIRONS & SUSTAINABILITY

G. Sudarsana Raju and P.T. Ashok Kumar
Yogi Vemana University, Department of Geology, Kadapa- 516 003

AUTHOR
1*. Dr. G. Sudarsana Raju, Assistant Professor, Department of Geology, Yogi Vemana University, Kadapa-516 003.

2. Mr. P.T. Ashok Kumar, Research Scholar, Department of Geology, Yogi Vemana University, Kadapa- 516 003.