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Physico-Chemical Parameters for Testing of Water of Khapri Village of Nagpur District -A Review

[1]Mrunal Bharatlal Patle, [2]Dr. Arif Khan
[1]PG Student, [2]Principal, Department of Civil Engineering, Nuva College of Engineering and Technology, Katol Kalmeshwar Road, Nagpur, India

Abstract: ***Water has been considered as liquid gold and crucial resource for human life. Groundwater is used for consuming and irrigation in diverse components of the sector. Assessing the exceptional of groundwater is an vital issue with regard to the usage of water for agricultural, domestic and commercial reason. Groundwater is taken into consideration to be of low cost and smooth supply of water. Socio monetary increase of the vicinity is involved with the control protection and efficient use of the resources. Present have a look at focuses on the evaluation of groundwater quality using spatial and multivariate statistical evaluation for the Khapri Village of Nagpur District. Due to increased human population, industrialization, use of fertilizers and man-made activity water is highly polluted with different harmful contaminants. People on globe are under tremendous threat due to undesired changes in the physical, chemical and biological characteristics of air, water and soil. Natural water contaminates due to weathering of rocks and leaching of soils, mining processing etc. It is necessary that the quality of drinking water should be checked at regular time interval, because due to use of contaminated drinking water, human population suffers from varied of water borne diseases. The availability of good quality water is an indispensable feature for preventing diseases and improving quality of life. It is necessary to know details about different physico-chemical parameters It is important to know details about exceptional physico-chemical parameters together with colour, pH, temperature, Electrical conductivity, Total Carbon di oxide, chloride contents, carbonate contents, bicarbonate contents, Total hardness, Dissolved Oxygen (DO), Biological oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total alkalinity used for trying out of water satisfactory. Standards prescribed by using World Health Organization (WHO) and Bureau of Indian Standard (BIS) for specific physico-chemical parameters additionally had been given for evaluating the fee of actual water sample.***
Keyword: Physico - chemical Water, Parameters, Hardness, BOD, COD, WHO, BIS.

I. INTRODUCTION

Water pollution is a severe trouble in India as almost 70 per cent of its surface water sources and a growing percentage of its groundwater reserves are infected via organic, toxic, organic, and inorganic pollution. In many cases, those assets had been rendered risky for human intake as well as for other activities, which includes irrigation and commercial needs. This suggests that degraded water great can make contributions to water shortage because it limits its availability for both human use and for the surroundings But due to increased human population, industrialization, use of fertilizers inside the agriculture and man-made interest it's far especially polluted with one-of-a-kind dangerous contaminants. Therefore it's miles vital that the exceptional of ingesting water must be checked at regular time c language, due to the fact because of use of infected consuming water, human populace suffers from various of water borne diseases. It is tough to apprehend the biological phenomenon fully because the chemistry of water revels a whole lot approximately the metabolism of the ecosystem and provide an explanation for the general hydro - biological courting. The availability of proper satisfactory water is an imperative feature for preventing sicknesses and enhancing exceptional of lifestyles. Natural water consists of one-of-a-kind sorts of impurities are delivered in to aquatic system by means of distinctive ways along with weathering of rocks and leaching of soils, dissolution of aerosol debris from the surroundings and from several human activities, together with mining, processing and the use of metallic based totally substances. The elevated use of steel-based totally fertilizer in agricultural revolution of the authorities may want to result in continued upward thrust in awareness of steel pollutions in fresh water reservoir because of the water run-off. Also faucal pollution of ingesting Due to boom of population, agriculture, and industries, call for home water has elevated many times at some point of the previous few years. Improper waste disposal and over exploitation of sources has affected the great, not only of tap water however also of ground water. People on globe are underneath first-rate risk because of undesired changes inside the bodily, chemical and organic characteristics of air, water and soil. These are related to animal and flowers and in the end affecting on it (Misra and Dinesh 1991). Industrial development (Either new or existing industry expansion) consequences inside the generation of business effluents, and if untreated

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effects in water, sediment and soil having mainly immoderate quantities of heavy metals which includes Pb, Cr and Fe, as well as heavy metals from commercial processes are of special issue because they produce water or chronic poisoning in aquatic animals (Ellis 1989). High levels of pollution specifically organic be counted in river water motive an growth in organic oxygen call for (Kulkarni 1997), chemical oxygen call for, total dissolved solids, overall suspended solids and fecal coli form. They make water unsuitable for drinking, irrigation or another use (Hari 1994). There are trends in developing international locations to use sewage effluent as fertilizer has received much importance as its miles taken into consideration a supply of natural count number and plant vitamins and serves as appropriate fertilizer (Riordan 1983). Farmers are mainly interested by popular blessings, like multiplied agriculture manufacturing, low price water source, powerful manner of effluent disposal, source of vitamins, natural count and many others, however are not well aware of its dangerous consequences like heavy metallic contamination of soils, crops and exceptional issues related to fitness. Research has proven that long term use of this sewage effluent for irrigation contaminates soil and crops to such an quantity that it becomes toxic to plants and causes deterioration of soil (Quinn 1978, Hemkes1980). This consists of extensive amount of probably dangerous substances such as soluble salts and heavy metals. Additions of those heavy metals are undesirable. Plants can collect heavy metals of their tissues in concentrations above the accredited levels that's considered to symbolize a hazard to the life of people, and animals feeding on those vegetation and may cause contamination of food chain, as determined that soil and vegetation contained many poisonous metals, that acquired irrigation water mixed with business effluent (Adnan Amin 2010). The high-quality of floor water relies upon on diverse chemical materials and their concentration, which might be often derived from the geological data of the precise location. Industrial waste and the municipal strong waste have emerged as one of the main motive of pollutants of surface and floor water. In many parts of the u . S . Available water is rendered non- potable due to the presence of heavy metal in excess. The state of affairs gets worsened during the summer time due to water shortage and rain water discharge. Contamination of water assets available for family and consuming functions with heavy elements, metallic ions and harmful microorganisms is one of the extreme principal health issues. The latest studies in Haryana (India) concluded that it's miles the excessive price of exploration then its recharging, inappropriate dumping of solid and liquid wastes, loss of strict enforcement of regulation and loose governance are the purpose of degradation of ground water fine (Guptaa 2009). Most of the rivers inside the city regions of the growing nations are the ends of effluents discharged from the industries. African international locations and Asian nations experiencing rapid business increase and that is making environmental conservation a hard undertaking. Sea water consists of huge wide variety of hint metals in very small concentration; this is a challenging matrix for the analytical chemist because of the very low concentrations of many essential hint metals (Robertson 1968, Riley).

II. PHYSICO- CHEMICAL PARAMETERS

It is very critical and crucial to check the water before it's far used for consuming, domestic, agricultural or commercial reason. Water need to be tested with specific physic-chemical parameters. Selection of parameters for trying out of water is only depends upon for what motive we going to use that water and what extent we want its satisfactory and purity. Water does content material unique sorts of floating, dissolved, suspended and microbiological in addition to bacteriological impurities. Some physical check have to be finished for checking out of its physical look such as temperature, coloration, odour, pH, turbidity, TDS and so forth, whilst chemical assessments have to be carry out for its BOD, COD, dissolved oxygen, alkalinity, hardness and different characters. For acquiring increasingly more first-class and purity water, it should be tested for its trace metal, heavy metal contents and natural i.E. Pesticide residue. It is apparent that ingesting water must skip these entire exams and it need to content material required quantity of mineral stage. Only inside the evolved international locations these types of criteria’s are strictly monitored. Due to very low attention of heavy metallic and natural pesticide impurities present in water it want notably sophisticated analytical devices and well trained manpower. Following distinctive physic chemical parameters are examined frequently for monitoring quality of water.

A. Temperature

In a longtime system the water temperature controls the price of all chemical reactions, and impacts fish boom, duplicate and immunity. Drastic temperature changes can be deadly to fish.

B. pH

pH is maximum important in determining the corrosive nature of water. Lower the pH cost better is the corrosive nature of water. PH changed into undoubtedly correlated with electrical conductance and general alkalinity(Guptaa 2009). The reduced fee of photosynthetic hobby the assimilation of carbon dioxide and bicarbonates that are ultimately liable for boom in pH, the low oxygen values coincided with excessive temperature for the duration of the summer month. Various elements bring about adjustments the pH of water. The higher pH values located indicates that carbon dioxide, carbonate-bicarbonate equilibrium is affected more because of change in physico- chemical situation (Karanth 1987).

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C. Electrical Conductivity

Conductivity shows substantial correlation with ten parameters including temperature , pH cost , alkalinity , total hardness , calcium , general solids, overall dissolved solids , chemical oxygen call for , chloride and iron attention of water. Navneet Kumar et al (2010) suggested that the underground consuming water great of take a look at region can be checked efficaciously by means of controlling conductivity of water and this could also be applied to water pleasant management of different have a look at regions. It is measured with the assist of EC meter which measures the resistance supplied by way of the water among platinized electrodes. The instrument is standardized with known values of conductance located with popular KCl answer.

D. Carbon Dioxide

Carbon dioxide is the end product of natural carbon degradation in nearly all aquatic environments and its version is often a measure of internet atmosphere metabolism (Smith 1997, 1993, Hopkinson 1985). Therefore, in aquatic biogeochemical research, it is proper to measure parameters that define the carbon dioxide system. CO_2 is likewise the maximum critical green residence fuel on Earth. Its fluxes throughout the air-water or sediment-water interface are among the most crucial worries in global trade studies and are regularly a measure of the internet atmosphere manufacturing/metabolism of the aquatic system. There are diverse easily measurable parameters of aquatic carbon dioxide system: which includes pH (pCO_2), total dissolved inorganic carbon (DIC) and total alkalinity (TA). Surface water pCO_2 may be measured with the aid of photometric approach (De Grandpre 1993, Wang, Z 2002) and DIC CO_2 is measured by coulometer or through an infrared CO2 analyzer (Dickson 1994). Total Alkalinity CO2 is decided with the aid of HCl titration of the water pattern to the CO_2 equivalence factor.(Gran 1952).

E. Alkalinity

It is composed basically of carbonate (CO_3^{2-}) and bicarbonate (HCO_3^-), alkalinity acts as a stabilizer for pH. Alkalinity, pH and hardness have an effect on the toxicity of many substances within the water. It is determined via simple dil HCl titration in presence of phenolphthalein and methyl orange signs. Alkalinity in boiler water basically results from the presence of hydroxyl and carbonate ions. Hydroxyl alkalinity (causticity) in boiler water is essential to protect the boiler towards corrosion. Too excessive a causticity causes different running troubles, consisting of foaming. Excessively high causticity stages can result in a form of caustic attack of the boiler referred to as "embrittlement".

F. Dissolved Oxygen

DO is one of the most essential parameter. Its correlation with water frame gives direct and oblique information e.g. Bacterial pastime, photosynthesis, availability of vitamins, stratification and so on. (Premlata Vikal, 2009). In the progress of summer season, dissolved oxygen decreased because of boom in temperature and additionally because of improved microbial hobby (Moss 1972, Morrissette 1978, Sangu 1987, Kataria, 1996). The high DO in summer time is due to boom in temperature and period of brilliant daylight has had an effect on at the % of soluble gases (O^2 & CO^2). During summer time the long days and intense daylight seem to boost up photosynthesis via phytoplankton, using CO_2 and giving off oxygen. This in all likelihood money owed for the greater traits of O_2 recorded at some point of summer time (Krishnamurthy R, 1990). DO in pattern is measured titrimetrically by Winkler's approach after five days incubation at 293K. The distinction in preliminary and final DO offers the quantity of oxygen fed on by way of the bacteria throughout this era. This technique needs unique BOD bottles which seal the inside surroundings from atmospheric oxygen.

G. Carbonate

Whenever the pH touches eight, Three, the presence of carbonates is indicated. It is measured via titration with standardized hydrochloric acid the use of phenolphthalein as indicator. Below pH eight.3, the carbonates are transformed into equal amount of bicarbonates. The titration also can be achieved pH metrically or potentiometrically.

H. Bicarbonate

It is likewise measured by way of titration with standardized hydrochloric acid using methyl orange as indicator. Methyl orange turns yellow below pH four.0. At this pH, the carbonic acid decomposes to provide carbon dioxide and water.

I. Biochemical Oxygen Demand (BOD)

BOD is a measure of natural fabric infection in water, specified in mg/L. BOD is the amount of dissolved oxygen required for the biochemical decomposition of organic compounds and the oxidation of certain inorganic substances (e.G., iron, sulfites). Typically the test for BOD is performed over a 5-day length (Milacron Marketing Co.).

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J. Chemical Oxygen Demand (COD)

COD is any other measure of natural material contamination in water specified in mg/L. COD is the amount of dissolved oxygen required to motive chemical oxidation of the organic material in water. Both BOD and COD are key indicators of the environmental health of a floor water deliver. They are usually used in waste water remedy however rarely in widespread water treatment. (Milacron Marketing Co.).

K. Sulphate

It is measured by using nephelometric method wherein the awareness of turbidity is measured towards the acknowledged attention of synthetically prepared sulphate answer. Barium chloride is used for producing turbidity due to barium sulphate and a combination of organic substance (Glycerol or Gum acetia) and sodium chloride is used to save you the settling of turbidity.

L. Ammonia (Nitrogen)

It is measured spectroscopically at 425 nm radiation by using making a color complex with Nessler's reagent. The situations of response are alkaline and purpose severe interference from hardness in water.

M. Calcium

It is measured by using complexometric titration with trendy solution of ETDA the usage of Patton's and Reeder's indicator beneath the pH situations of extra than 12.Zero. These situations are carried out by including a set volume of 4N Sodium Hydroxide. The volume of titre (EDTA answer) against the known extent of sample gives the concentration of calcium within the pattern.

N. Magnesium

It is also measured by complexometric titration with wellknown solution of EDTA the use of Eriochrome black T as indicator under the buffer situations of pH 10.0. The buffer solution is crafted from Ammonium Chloride and Ammonium Hydroxide. The answer resists the pH variations in the course of titration.

O. Sodium

It is measured with the assist of flame photometer. The instrument is standardized with the acknowledged awareness of sodium ion (1 to one hundred mg/litre). The samples having higher attention are suitably diluted with distilled water and the dilution element is carried out to the discovered values.

P. Potassium

It is also measured with the help of flame photometer. The instrument is standardized with recognized awareness of potassium answer, within the variety of 1 mg to 5 mg/litre. The sample having better awareness is suitably diluted with distilled water and the dilution component is carried out to the located values.

Q. Chloride

It is measured by means of titrating a recognized volume of pattern with standardized silver nitrate solution the use of potassium chromate answer in water or eosin/fluorescein solution in alcohol as indicator. The latter indicator is an adsorption indicator while the previous makes a red coloured compound with silver as quickly because the chlorides are prompted from answer.

R. Silicates & Phosphate

These also are measured spectroscopically. Yellow shade is advanced from the motion of phosphates and silicates on molybdate ion under sturdy acidic situations. The depth of shade is without delay proportional to the attention of phosphate and silicates in the sample. Phosphate complexes are reduced by using vulnerable decreasing sellers together with ascorbic acid or tartaric acid (potassium antimonyl tartarate) where as silica complexes require strong reducing conditions of hydrazine or bisulphite. The colour of decreased complicated is sky blue. Most of the physico- chemical parameters are determined by means of preferred techniques prescribed by means of ASTM (2003) and APHA (1985), Trivedy and Goal (1986), Kodarkar (1992). Some physico chemical analysis looks at of polluted water sample in India Physico chemical parameter look at is very critical to get specific idea approximately the exceptional of water and we are able to evaluate effects of various physico chemical parameter values with popular values. Aftab Begum et al.(2005) studied diverse physico-chemical parameters and evaluation of untreated fertilizer effluent. His end result revealed that the parameters like EC, TDS, TSS, BOD, COD and ammonia are excessive as compared to permissible limits of CPCB (1995), and fungal analysis confirmed the presence of 15 species remoted on Malt Extract Agar (MEA) medium thereby indicating the pollutional load of the effluent. Dey Kallol et al.(2005) studied numerous physio-chemical

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parameters at the samples drawn from the river Koel, Shankha and Brahmani. It become determined that dilution all through rainy season decreases the steel concentration degree to a enormous volume. However the enrichment of these metals with the aid of bio-magnification and bioaccumulation in suitable for eating components produced in water is time-honored to supply a extraordinary impact at the water of the river Brahamani that's of deep public issue. Pawar Anusha et al.(2006) has studied the bore well and dug nicely water samples from a extraordinarily polluted industrial area – Nacharam. Sample were amassed and analysed for physico-chemical parameters by using adopting the standard strategies for exam for water and waste water. The analyzed samples received a excessive values, compared with consuming water requirements. Poonkothai and Parvatham (2005) were studied physico-chemical and microbiological research of vehicle wastewater in Nammakkal, Tamil Nadu, India indicated that the values for physico-chemical parameters have been at the better side of permissible limits of BIS. Microbiological studies found out the presence of bacteria at high concentration and those organisms serves as indicators for pollutants. Rokade and Ganeshwade (2005) confirmed high fluctuations inside the physico-chemical parameters indicating the depth of pollutants. The pH ranged from minimal of 6.6 to maximum of 8.4, chlorides from 132.5 to 820.4mg/l,hardness ranged from seventy four to 281 mg/l, CO2 from 2.1 to five.09, BOD from four.437 to 112.432 mg/l, sulphates zero.192 to 5.12 mg/l, nitrates zero.5 to at least one.012. The minimum pH value of 6.Three mg/l became discovered during winter season and most of 8.Ninety three mg/l in summer. The pH suggests widespread decline from upstream to downstream. CO2 become found to maximum in summer time reaching up to 55.Forty four mg/l and reduced to at the least 2.28 mg/l for the duration of wet season. From the facts accrued it may be concluded that the inverse relationship, which is known to exist among pH and CO2 , is not current in the gift research(Sawane 2006).

Sharma Madhavi et al. (2005) studied ground water pleasant of business location of Kishangarh for diverse physicochemical parameters seasonally with out and after addition of marble slurry in distinctive proportions. From the look at it is clear that those parameters increase with the addition of marble slurry leading to deterioration of the general great of the groundwater. Singhal et al.(2005) study reports on the treatment of pulp and paper mill effluent through Phanerochaete chrysosporium and the equal has been compared at two exceptional pH five.5 and 8.5. At both the pH, shade, COD, lignin content material and general phenols of the effluent considerably declined after bioremediation. However, extra decolourisation and discount in COD, lignin content and overall phenols were observed at pH 5.5. Chavan et al. (2005) changed into completed investigation to observe the one of a kind natural pollution gift in the Thane creek water. The creek water suggests excessive values of BOD and COD in conjunction with 15 phenolic compounds, detergents, alcohols, ether and acetone, which might be dangerous to aquatic lifestyles. The origin of this pollution is especially from the access of effluents from surrounding industries. Two most important cement industries of the Ariyalur and Reddipalayam were selected and the waste water discharged from these gadgets had been accumulated and subjected to analysis. The values of different parameters have been as compared with the same old values given by means of Tamil Nadu Pollution Control Board. The motives for variations are analysed and remedial measures recommended (Gnana 2005). In mineral based industry among numerous environmental problems the water pollution has posed maximum disastrous impact and complicated challenges for assignment necessary remedial measures. The assets of water pollution in distinctive mineral based totally industries including mining, mineral processing, incorporated iron and metallic plant and nonferrous steel industries are defined. Various liquid effluent remedies techniques both physiochemical and organic have been described and mentioned. The procedure in every case being used commercially, had been outlined.(Jena and Mohanty 2005).

Premlata Vikal (2009) has been workout the physico-chemical characteristics of the Pichhola lake water. He studied numerous parameters like air and water temperature, pH, loose CO2, dissolved oxygen, biochemical oxygen demand, chemical oxygen demand, conductivity, general dissolved solids, hardness, general alkalinity, chloride, nitrate, phosphate and sulphate. The consequences discovered that the values of conductivity, COD, and sulphate had been determined to go the same old limits in water samples. The coefficient of correlation (r) amongst diverse physico- chemical parameters was additionally made. Saravanakumar and Ranjith Kumar (2011) provides paper studies about groundwater best of Ambattur business place in Chennai City. They studied parameters such as pH, total alkalinity, total hardness, turbidity, chloride, sulphate, fluoride, general dissolved solids and conductivity. It became located that there has been a moderate fluctuation within the physico-chemical parameters some of the water samples studied. Comparison of the physico-chemical parameters of the water sample with WHO and ICMR limits showed that the groundwater is pretty contaminated and account for fitness hazards for human use. Manjare et al. (2010) had been studies the Physico-chemical Parameters of Tamadalge Water Tank in Kolhapur District, Maharashtra. Monthly Changes In Physical and Chemical Parameters Such as Water Temperature, Transparency, Turbidity, Total Dissolved Solids, pH, Dissolved Oxygen, Free Carbon dioxide, and Total Hardness, Chlorides, Alkalinity, Phosphate and Nitrates. Were analyzed for a periods of 12 months. All Parameters were in the Permissible limits. The consequences imply that the tank is Non-polluted and may be used for Domestic and Irrigation.

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Table 1: Different analytical water quality parameters used for testing of quality of water and their sourse of occurrence and potential health effects with USEPA guidelines.

Sr. No.	Parameter	Source of occurrence	Potential health effect
01	Turbidity	Soil runoff	Higher level of turbidity are associated with disease causing bacteria's.
02	Color	Due to presence of dissolved salts	-
03	Odor	Due to biological degradation.	Bad odor unpleasant
04	Electrical conductivity	Due to different dissolved solids.	Conductivity due to ionizable ions. High conductivity increases corrosive nature of water.
05	pH	pH is changed due to different dissolved gases and solids.	Affects mucous membrane; bitter taste; corrosion
06	Dissolved oxygen	Presence due to dissolved oxygen.	D. O. corrode water lines, boilers and heat exchangers, at low level marine animals cannot survive.
07	Total Hardness	Presence of calcium (Ca2+) and magnesium (Mg2+) ions in a water supply. It is expressed. Hardness minerals exist to some degree in every water supply.	Poor lathering with soap; deterioration of the quality of clothes; scale forming
08	Total Alkalinity	Due to dissolved gases (CO2)	Embrittlement of boiler steel. Boiled rice turns yellowish
09	TDS	Presence all dissolved salts	Undesirable taste; gastro-intestinal irritation; corrosion or incrustation
10	Calcium	Precipitate soaps, anionic	Interference in dyeing, textile,

III. PRELIMINARY SURVEY

A. Sampling

Highly impure water has diverse outcomes on human being, domestic reason in addition to business use. Such as human beings get affected/ infected due to presence of different micro organism and heavy metals found in water. It may also have an effect on the distinctive body organ and physiological sickness. Hard water isn't suitable for home use including washing, bathing, cooking in addition to different reason. Hard water is also now not suitable for industrial and agricultural use. It damages the sensitive machineries and impacts the fine, stability and glossiness of the very last product.Central water fee is preserving a 3 tier Laboratory system for evaluation of the parameters. The Level-I Laboratories are positioned at 258 field water pleasant tracking stations on numerous rivers of India where physical parameters along with temperature, shade, odour, specific conductivity, general dissolved solids, pH and Dissolved Oxygen of river water are determined . There are 24 Level-II Laboratories positioned at decided on Division Offices to examine 25 exclusive physico- chemical traits and bacteriological parameters of river water.

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Figure 1 Sample location and study area boundary Khapri Village of Nagpur District

The Sampling of properly is determined by using maintaining in view the underground stage and flow pattern. According to the evaluation of existing records, interviews with the farmers, stakeholders and private commentary, the mostlarge environmental trouble turned into identified as groundwater pollutants. Sampling stations had been chosen in order that the in all likelihood influences of the prevailing domestic discharge and commercial effluent discharge can be reflected. Groundwater samples have been accrued from numerous abstraction resources at diverse depths masking considerably populated vicinity, industrial, business, agricultural and residential colonies, to attain an amazing aerial and vertical illustration. Depth of the sample extraction inside the have a look at vicinity become inside the range of 30 ft to 250 feet. Hand pumps have been constantly pumped previous to the sampling, to make certain that groundwater to be sampled became representative of groundwater aquifer. Forty five the groundwater samples had been drawn from bore-wells and open wells. The selection of groundwater excellent survey vicinity is primarily based on the subsequent criteria

1) Drinking water wells
2) Wells toward polluting sources like industries, city wastewater Drains, rubbish dumpsites and so forth.
3) Bore wells in residential location

IV. CONCLUSION

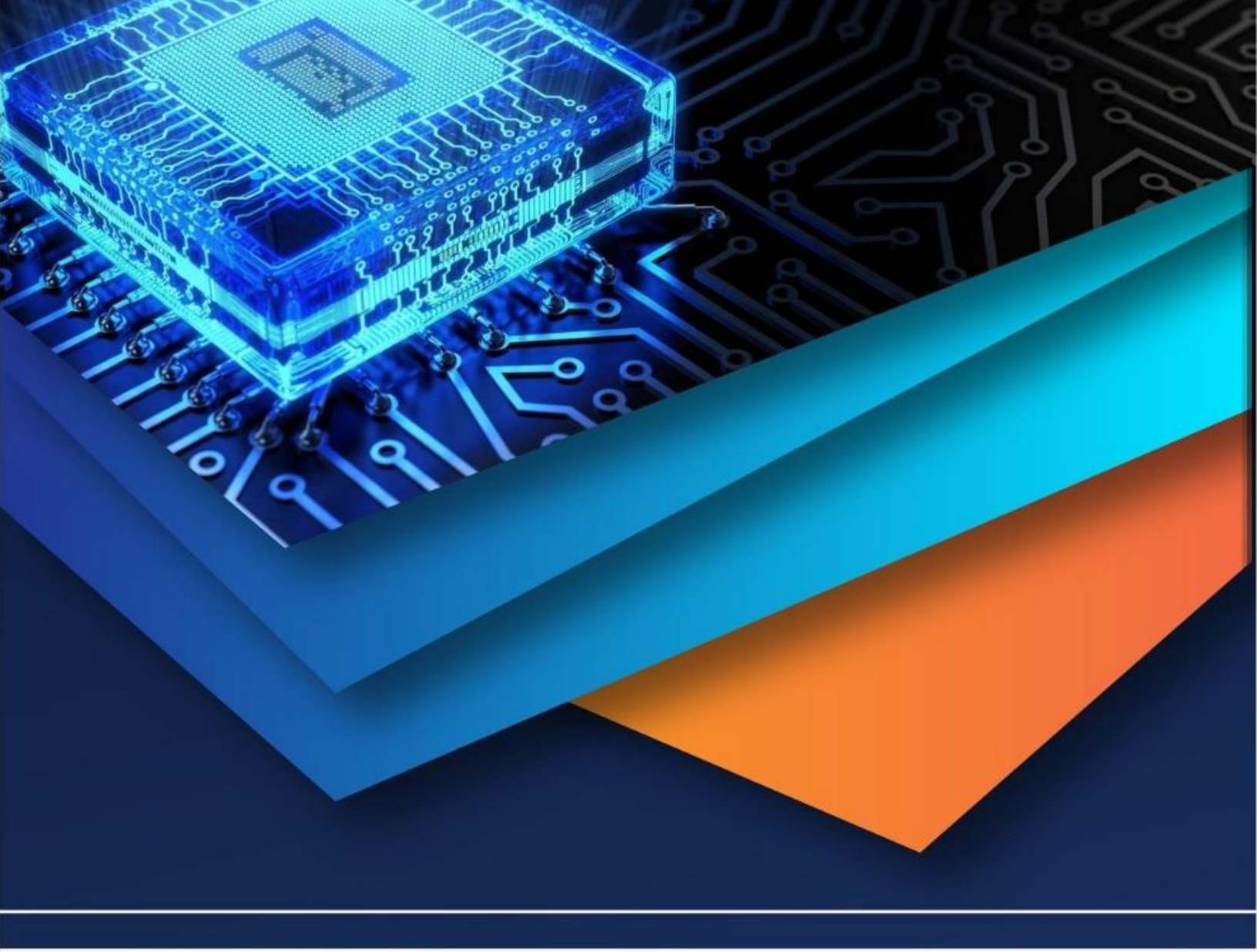
The results of water pollutants are not most effective devastating to people but additionally to animals, fish, and birds also destroys aquatic lifestyles and reduces its reproductive capability. Polluted water is wrong for drinking, activity, agriculture, and enterprise. It diminishes the aesthetic high-quality of lakes and rivers. Eventually, it's miles a chance to human health. To decrease the pollution in drinking water we will use modern-day technology inclusive of opposite osmosis and ozonation in huge scale, that are effective within the treatment of water but their feasibility in a rural setting wishes to be labored out. The example of Reverse Osmosis water corporation gadget in Gujarat is an initiative wherein WASMO in collaboration with a technology company has set up community managed opposite osmosis machine in seventy one villages throughout the nation to cope with the problem of salinity. The communities contributed 10% of the capital value and the relaxation changed into supplied via the government. The technology provider assists in schooling of village teenagers for jogging the RO plant. People are becoming water at a charge of 5 paisa

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REFERENCES

[1] Adefemi S. O. And E. E. Awokunmi, (2010), Determination of physico-chemical parameters and heavy metals in water samples from Itaogbolu place of Ondo-State, Nigeria, African Journal of Environmental Science and Technology, 4(three), pp 145-148.
[2] Adeyeye EI, (1994), Determination of heavy metals in Illisha Africana, associated Water, Soil Sediments from some fish ponds, International Journal of Environmental Study, 45, pp 231-240.
[3] Three. Adnan, Amin, Taufeeq, Ahmad, Malik, Ehsanullah, Irfanullah, Muhammad, Masror, Khatak and Muhammad, Ayaz, Khan, (2010), Evaluation of industrial and metropolis effluent best the usage of physicochemical and biological parameters, Electronic Journal of Environmental, Agricultural and Food Chemistry, nine(5), pp 931-939.
[4] Aftab, Begum, S. Y, Noorjahan, C. M., Dawood, Sharif, S, (2005), Physico-chemical and fungal analysis of a fertilizer manufacturing facility effluent, Nature Environment & Pollution Technology, four(4), 529-531.
[5] Agarwal, Animesh and Manish, Saxena, (2011), Assessment of pollution with the aid of Physicochemical Water Parameters Using Regression Analysis: A Case Study of Gagan River at Moradabad- India, Advances in Applied Science Research, 2(2), pp 185 -189.
[6] APHA, (1985), Standard Methods For Examination of Water and Wastewater, 20th Edition, American Public Health Association, Washington D. C.
[7] ASTM International, (2003), Annual Book of ASTM Standards, Water and Environmental Technology v. 11.01, West Conshohocken, Pennsylvania,pp 6-7.
[8] Basavaraja, Simpi, S. M., Hiremath, K. N. S. Murthy, K. N. Chandrashekarappa, Anil
[9] N. Patel, E.T.Puttiah, (2011), Analysis of Water Quality Using Physico-Chemical Parameters Hosahalli Tank in Shimoga District, Karnataka, India, Global Journal of Science Frontier, Research, 1(3), pp 31-34.
[10] Chavan, R. P., Lokhande, R. S., Rajput, S. I., (2005), Monitoring of natural pollutants in Thane creek water, Nature Environment and Pollution Technology, four(four), pp 633- 636.
[11] DeGrandpre, M. D, 1993. Measurement of seawater pCO2 using a renewable-reagent fiber optic sensor with colorimetric detection, Analytical Chemistry, 65, pp 331-337.
[12] Eleven. Dey, Kallol, Mohapatra, S. C., Misra, Bidyabati, (2005), Assessment of water quality parameters of the river Brahmani at Rourkela, Journal of Industrial Pollution Control, 21(2), 265-270.
[13] Dickson, A. And Goyet, C, (1994), DOE Handbook of Methods for the Analysis of the Various Parameters of the Carbon Dioxide System in Sea Water, Version 2.
[14] Drinking Water Inspectorate, available at http//www.Dwi.Gov.United kingdom, accessed at some point of September 2012.
[15] Ellis, K.V., (1989), Surface water pollutants and its control" Macmillan press Ltd, Hound mill, Basingstoke, Hampshire RG 21 2xs and London, three-18, pp ninety seven,one hundred,one zero one and 208.
[16] Gnana Rani, D. F., Arunkumar, K., Sivakumar, S. R., (2005), Physio-chemical evaluation of waste water from cement units, Journal of Industrial Pollution Control, 21(2), 337-340.
[17] Sixteen. Gran, G., (1952), Determination of the equivalence factor in potentiometric titrations. Part II. Analyst, seventy seven,pp 661-671.

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