UNIVERSITY GRANTS COMMISSION
WESTERN REGIONAL OFFICE
GANESSHKHIND,PUNE-411 007.

PROFORMA FOR SUBMISSION OF INFORMATION AT THE TIME OF SENDING THE FINAL REPORT OF THE WORK DONE ON THE PROJECT

1.NAME AND ADDRESS OF THE PRINCIPAL INVESTIGATOR :
H.D.Jahangirpuria

2. NAME AND ADDRESS OF THE INSTITUTION :
K.K.SHAH JARODWALA
Mninagar Science College,
Rambaug,
Maninagar,
Ahmedabad-58

1. UGC APPROVAL NO. AND DATE : **File No. 47-664/13 (WRO)**
2. DATE OF IMPLEMENTATION : **09-05-2014**
3. TENURE OF THE PROJECT : **02 YEARS**
4. TOTAL GRANT ALLOCATED : **1,25,000/=**
5. TOTAL GRANT RECEIVED : **1,25,000/=**
6. FINAL EXPENDITURE : **1,26,794/=**
7. TITLE OF THE PROJECT : **" The chemistry of ground water in Sanand- (Ahmedabad) with regard to their suitability for drinking purpose** "

10 . OBJECTIVE S OF THE PROJECT : **To evaluate the effect on the ground water quality due to disposal of industrial wastes into open area . To analysis of fiftteen selected physico-chemical parameters of Sanand villages (ahmedabad)**

11. WHETHER OBJECTIVES WERE ACHIEVED :
We evalutated various groundwater quality effect due to disposal of Industrial wastes into open area.We analysised of fifteen selected physico-chemical parameters of Sanand- villages (Ahmedabad).

12. ACHIEVEMENTS FROM THE PROJECT :
In present study we collected water samples from 15 sampling sites - Villages We evalauted various physico-chemical parameters of selected samples.

- The avarage tempreture of our study was 30-33 ^{0}c .
- Codutivity were recored in the range of 1023 mS/cm . The avarage value of recored conductivity was 1255 mS/cm.
- The range of TDS from 312 to 800 mg/L.with avarage value 450 mg/ L.
- Total Alkalinity of our study was 580 mg/L. to 256 mg/L.
- The presence of Chloride concentration was varied from 27.22 mg/L.to 598 mg/l.
- Minimum Sulphate 46.23 mg/L was recored in January in Bhavanpur , while maximum 420.5 mg/L in Rampur.
- Phosphate was in the range of 3.6 mg/L to 56 mg/L , Avarage value of Phosphate was 30.55 mg/L.
- Nitrate was recored in the range of 100 mg/L and maximum was recored
- 468 mg/L . The average value of recored Nitrate was 250 mg/L.
- The average value of Flourine 1.1 mg/L to 2.2 mg/L.
- Dissolve Oxygen were range from 4.4 to 9.4 mg/L
- Bio- chemical oxygen demand found maxymum 12.00 mg/ L in Matoda and minimum 3.56 mg/l in Sanand.
- Chemical- Oxygen Demand were varied between 10.85 mg/L to 26.80 mg/L.
- The concentration of Cu, Mn, Zn and Fe is slightly higher than the drinking water standared limits in groundwater .

13 . SUMMARY OF THE FINDINGS :

Water is essential for all living organism. Water plays an important role in all human as well as animals and also in green plants. Nowadays Due to So many reasons like Over population, Maximum industrilaztion,chemical factories etc pollute the water. So it is our prime important to make Water free from pollutio.If We save water than water save us.So keeping it in our mind here we present research work on the analysis of various parameters like, pH,Conducivity, COD,BOD,DO,Chloride,Fluride,Sulphate,Nitrite,Phosphate,Calcium,maganisum,Tota alkanity and TDS of different groudwater collected from different sites of

Sanad(Ahmedabad) city of Gujarat state of India.In present study we collected various sampes from different sites from different time or season.We reporeted all the data with maximum and mnimum vaules and also avrage value of particulat parameterts.

With the advent of industrial complex in Sanand, Ahmedabad city of Gujarat state of India, the quality of groundwater in this region has been affected negatively due to discharge of industral effluents into an open lands and ponds, tanks and streams. The improper disposal of the industrial effluents has caused widespread groundwater pollution.

In the present study, water samples from bodies and groundwater were collected and they analyzed for their major and minor constituents like various presence of ions such as Chloride,Fluride, Sulphate, Nitrite,Phosphate,Calcium,maganisum. The high values of Electrical Conductivity (EC) and concentration of major and minor constituents indicate the negative effects . The samples were carried out for a period of 12 months from Nov-14 to Octo-15 including winter , summer and rainy seasons. The 15 samples of different villages of Sanand- villages were evaluated for selected physico-chemical parameters such as pH,Conductivity, D.O. ,B.O.D. , and C.O.D. It can be concluded that most of the parameters are found above the permissible limit according to reported. The study reveals that Sanand villages groundwater is unfit for drinking but it can be utilized for fish culture and irrigation.

The high concentraton of ions and trace elements in groundwater of the study area indicates that the pollution of groundwater took place in the shallow water table condition inherent around Sanand. The results are important in understanding the influence of industrial effluents in groundwater. Therefore, the groundwater of the study area is not safe for drinking purpose.

The soils are becoming acidic and the surfacial encrustation of salts is evident in the area situated mossty along the stream courses is affected by the significant reduction in the crop yields. The groudwater reservoir has now become degraded which was which was fresh a few decades ago. The improper disposal of the stream is also polluted due to disposal to industrial effluents.

It is also observed that the concentration of water quality indication parameters such as B.O.D., D.O. and toxic elements are slightly higher than the permissible limits of drinking water standard . It indicates that the groundwater of the study area is polluted. If disposal of untreated industrial effluents continue, the groundwater may became hazardous for human health in future. Therefore, it is suggested that the monitoring of water quality should be the study area.

14. CONTRIBUTION TO THE SOCIETY :
(GIVE DETAILS)

To provide further guidance for the elaboration of water quality criteria and water quality objectives for waters the following recommendations have been put forward:

- The precautionary principle should be applied when selecting water quality parameters and establishing water quality criteria to protect and maintain individual uses of waters.
- In setting water quality criteria, particular attention should be paid to safeguarding sources of drinking-water supply.
- Water-management authorities in consultation with industries, municipalities, farmers' associations, the general public and others should agree on the water uses in a catchment area that are to be protected. Use categories, such as drinking-water supply, irrigation, livestock watering, fisheries, leisure activities, amenities, maintenance of aquatic life and the protection of the integrity of aquatic ecosystems, should be considered wherever applicable.

- Water-management authorities should be required to take appropriate advice from health authorities in order to ensure that water quality objectives are appropriate for protecting human health.
- Established water quality objectives should be considered as the ultimate goal or target value indicating a negligible risk of adverse effects on use of the water and on the ecological functions of waters.
- Where necessary, a step-by-step approach should be taken to attain water quality objectives, making allowance for the available technical and financial means for pollution prevention, control and reduction, as well as the urgency of control measures.
- The setting of emission limits on the basis of best available technology, the use of best environmental practices and the use of water quality objectives as integrated instruments of prevention, control and reduction of water pollution, should be applied in an action-oriented way. Action plans covering point and diffuse pollution sources should be designed, that permit a step-by-step approach to water pollution control which are both technically and financially feasible.
- The public should be kept informed about water quality objectives that have been established and about measures taken to attain these objectives.

15 . WHETHER ANY PH.D. ENROLLED / PRODUCED OUT OF THE

PROJECT : **NO**

16. NO. OF PUBLICATION OUT OF THE PROJECT : **One research paper Published.H.D.Jahangirpuria,S.A.Makwana and C.G.Patel, "Physico-Chemical Analysis of Drinkng Water of Sanand District Villages", International Journal of Pure & Applied Chemistry " Volume : 10, Number :1,pp.15-17 , January- March-2015**
(PLEASE ATTACH RE- PRINTS)