

DATA SHEET FOR RESEARCH SCHOLARS



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9. Funding Agency: Rajiv Gandhi National Fellowship (RGNF)
10. Date of commencement of Fellowship: 19.01.2016
11. Period of Fellowship: 5 years
12. Title of the Research Work: **HYDROGEOCHEMICAL CHARACTERIZATION OF GROUNDWATER IN BALANGIR AND PUINTALA BLOCKS, BALANGIR DISTRICT, ODISHA, INDIA**
13. Name of the Guide/~~Co-Guide~~: Dr.Nandita Mahanta
14. Registration Number: 194/2016/Geology
15. A Brief Abstract of your Research Work (Within 200 words):

The groundwater quality is normally characterized by different physico-chemical characteristics. These parameters changes widely due to the various types of pollution, seasonal fluctuation, groundwater extraction etc. The quantity and the suitability of groundwater for human consumption and for irrigation are determined by its physical, chemical and bacteriological properties. Groundwater is used for domestic, industrial, water supply and irrigation all over the world. According to WHO organization, about 80% of all the diseases in human beings are caused by water. Once the groundwater is contaminated, its quality cannot be restored back easily and to device ways and means to protect it. The analysis of the water quality is very important to preserve and prefect the natural eco system. My present research work is aimed at assessing the water quality index for the groundwater samples of Balangir and Puintala blocks of Balangir district. The study area lies in western part of Odisha bounded by latitude 19⁰39'N to 20⁰70'N and longitude 83⁰48'E to 85⁰06'E falling in Survey of India topo sheet no. F44X2 or 64P/2 and F44X10 or 64P/10. A total of 100 groundwater samples each for both post- monsoon of 2016 and pre-monsoon of 2017 periods have been collected. The physical parameters pH, Electrical Conductivity (EC), Total Dissolved Solids (TDS) have been determined in the field itself. The samples were analysed for cations like Ca, Mg, Na, K, anions like Cl, HCO₃, SO₄ and heavy metals like Fe,Cr, Mn,Cd, Nitrate. In the near future I will plotting the chemical data in various diagrams and determine the suitability of ground water for drinking and irrigation purposes. The result of the hydro geochemical analysis will give us information regarding the purity and quality of groundwater. From hydro geological data whether the groundwater is polluted or not, we

can also know the type of pollutant that is present in the water medium. Groundwater is utilized for number of properties such as drinking, cultivation and industry etc. The hydro geological data determine the suitability of the groundwater for a particular purpose. The final result will have a greater contribution towards an economic development of the area.

16. Status of Research Work:

- | | |
|------------------------------|-------------------------------------|
| (a) Writing the synopsis | <input type="checkbox"/> |
| (b) Review of Literature | <input type="checkbox"/> |
| (c) Data Collection | <input type="checkbox"/> |
| (d) Data Analysis | <input checked="" type="checkbox"/> |
| (e) Writing the draft thesis | |

17. Do you have your profile in the following research networks?

- | | |
|--------------------|--------------------------|
| (a) Google Scholar | <input type="checkbox"/> |
| (b) ResearchGate | <input type="checkbox"/> |
| (c) Academia | <input type="checkbox"/> |

18. Do you access the following e-resources subscribed by the university

- | | |
|----------------------------------|--------------------------|
| (a) E-Sodh Sindhu from INFLIBNET | <input type="checkbox"/> |
| (b) ProQuest | <input type="checkbox"/> |

19. Number of Papers published in referred journals with ISSN:

20. Mention any TWO of your best publications in APA standard:

Sabita Bakhara.

Signature of the Research Scholar

Nandita Mahanta

Countersigned by the Research Supervisor