Smt.Kandukuri Rajyalakshmi Government Degree College (W),

Rajamahendravaram, East Godavari District, Andhrapradesh.

23/11/2022

From

The Principal.

Smt. Kandukuri Rajya Lakshmi College for Women,

Rajamahendravaram.

To

The Manager,

Ground Water Department,

Rajamahendravaram.

Sir,

Sub: - Requisition for Permission to visit the ground water department. - submitting - reg.'

As a part of academic curriculum Field trip to students is mandatory. In this connection it is to bring to your notice that our college students of III B.Sc wish to visit the ground water department.

Hence, request you to permit our students (50 Number) and staff members (5 Number) to visit the same

Thanking you,

Yours sincerely

PRINCIPAL

S.K.R. Government Degree College (Women)

RAJAMAHENDRAVARAM.

East Godavari Dist., Andhra Pradesh

	LIST OF BZC EM STUDENTS	
1	P. Meghana reddy	P. Meghana Reddy
2	M. Srihitha	M. Durga Srihitha.
3	K. Bhavani	K. Bhavani
4	CH. Deepika	Ch. deepika
5	M. Priyanka	M. Priyanka
6	N. Bhavana	N. Bhavana
7	K. Sravani	K. Sravani
8	N. Swathi	N. Swathi
9	P. Bharathi lucky	P. Bharathi lucky.
10	CH. Srilakshmi	Ch. Sri Lakshmi
11	T. Sravanthi	T. Sravanthi
12	P. Kusuma Bhargavi	P. Kusuma Bhargavi
13	M. Niharika	M. Niharika
14	G. pasanna	G. prasanna
15	P. Aruna	P. Aruna
16	CH. Sonia	Ch. Sonia.
17	D. Sravya keerthi	D. Sravya Keerthi
18	S.Bhargavi	S. Bhargavi
19	CH.Varalakshmi	Ch. Varalakshmi
20	A.Keerthana	A. Keerthana
21	B.Satya	~~A. Keerthana~~ B. satya
22	T.Sneha Bharathi	T. Sneha Bharathi
23	K.Lahari	K. Lahari.
24	K.Veni sri devi	K. Devi
25	S.Alekya	~~S. Alekya~~
26	S.Vandana	S. Vandana
27	V.Pranitha	V. Pranitha
28	A.Pravallika	A. Pravallika
29	K.Sravani	K. Sravani
30	S.Neeraja devi	S. Neeraja devi
31	M.Shyni	M. Shyni
32	B.Navya	B. Navya
33	V.Harika	V. Harika
34	E.Teja sri	E. Teja sri

	LIST OF BZC TM STUDENTS	
1	JAGANNADHAM SWARNA	J. Swarna
2	TURRAM SANDHYA RANI	T. Sandhya Rani
3	VARA MADHURIMA	V. Madhurima.
4	TURRAM RANJITHA	T. Ranjitha
5	TURRAM KAVYANJALI	T. Kavyanjali
6	PODIYAM SUNITHA	P. sunitha
7	PENUMUNCHI MOUNIKA	P. Mounika
8	SEERSAM POSAMMA	S. posamma
9	PATARA CHANDINI	P. Chandni
10	NAKKA SWATHI	N. Swathi
11	MIDIYAM PAVANI DURGAMBICA	M. Pavani durgambica
12	KOTHAPALLI SANGEETHA	K. Sangeetha
13	KIMUDU PRAMEELA	K. pramela
14	KATHETI LALITHA	K. Lalitha
15	GURUVELLI GIRIJA	G. Girija
16	GADI JAYASRI	G. Jayasri
17	CHODI UMA NAGA MALLESWARI	Ch. uma naga malleswari
18	CHODI LAKSHMI KALYANI	Ch. lakshmi kalyani
19	CHODE NAGAMANI	Ch. Nagamani
20	CHITTIRI APARNA	Ch. Aparna
21	CHEELI RESHMA	Ch. Reshma
22	BEERABOINA DURGABHAVANI	B. DurgaBhavani
23	BATTINA KRUPA RATNAM	B. Krupa Ratnam
24	BATHINA DEEPIKA	B. Deepika
25	BABY YANGALA	Y. Baby
26	NARSI BALA TRIPURA SUNDARI DEVI	N.B.T.S. Devi
27	SUNNAM VENKATA LAKSHMI	S. Venkatalakshmi
28	PODIYAM POSIVENI	P. Posiveni
29	SURYA TEJASRI SIRASAM	S. Tejasri

Ground Water Department

Water Quality level - II Laboratory

→ Water analysis lab:-

→ Water is analysed for checking the quality of it.

→ The water is checked for its purity for the irrigation purpose.

⇒ Process:-

→ To check the quality of water, it is collected in 2 samples.

→ One is collected in the pre monsoon ie., may and the other one is collected in novem ber ie., postmonsoon. in one year.

→ The sample water is collected in 1 Litre of each type from various places.

East godavari - 200 samples
Krishna - 250 samples
Guntur - 350 samples
West Godaveri - 120 samples.

⇒ Collection of water:-

→ water is collected from the underground by digging it to several feet below.

→ It must be collected without air bubbles. to prevent the change in the quality due to the

presence of CO_2.

⇒ Checking of quality of water :-

→ At first, the Electrical Conductivity and the pH of the sample is to be checked.

→ Electrical conductivity is checked by the Electro conductivity meter.

→ This method is used to check the quality of water.

→ The electrical conductivity values depends upon the number of ions dissolved in the sample

→ If there are high / more ions, it is having low quality. It is not suitable for irrigation.

→ water has both minor and major ions, which is used in irrigation.

→ only major ions are tested in the lab - II

Ex:- potassium, SAR, RAS, Carbonates bicarbonates, Flourine, Chlorine etc.

→ Anions and cations are checked in the laboratory.

→ The pH value is ranging from 0 – 14. which is from 0 – 6 is acidic

7 is ~~basic~~ Neutral

8-14 is basic

Titration method is used for the checking of ions.

⇒ Titration:-

⇒ This method is used after the Electrical conductivity and pH meter test.

⇒ Use this method to obtain the values in "ppm"

⇒ The EC & pH measured sample taken for this method.

⇒ Process:-

EC = 208. ; pH = 5.59.

Test for Bicarbonate:-

→ 20ml of sample is pipetted out into a conical flask. A burette containing H_2SO_4 is placed on a stand.

→ Indicators like phenapthalene is used, it acts like strong acid and strong base

→ Bromo Cresol green (BCG) is added as indicator for Bicarbonate in a single drop.

→ The sample turns blue in colour, when titrated turns to light green which is the end point.

→ Initial reading = 10

final reading = 12

→ Since the pH is 5.59, it is less than 7, hence it is acidic.

→ So no carbonates are present. only bicarbonates are present

→ when pH < 8.3 → only Bicarbonates present

pH > 8.3 → Both bicarbonates and Carbonates are present.

⇒ Test for chloride :-

→ Sample is pipetted out in a conical flask

→ Burette is containing silver nitrate ($AgNO_3$)

→ Indicator potassium chromate ($K_2Cr_2O_7$) is used.

→ Sample turns yellow and on titration with $AgNO_3$. turns to light/pale orange colour.

Initial reading = 14.2

Final reading = 15.6

⇒ Test for magnesium ions :-

→ It is tested with EDTA indicator.

→ There are two EDTA indicators. ie., EDTA - 1, EDTA - 2.

→ EDTA - 1 is taken in 0.5 ml in the sample pipetted out into conical flask.

→ ERIOCLON BLACK TEA (EBT) is used as indicator in the sample in single drop.

→ The sample turns to Blue colour.

initial = 4

final = 4.4

→ EDTA-2 is taken in the sample and NaOH buffer with Buroxide indicater [Nacl + Ammonium purpurate] is added into conical flask

→ The sample turns pink colour and after titration violet colour is the end point.

→ Initial reading = 4.4

final reading = 4.6.

*Note :- The change in colour can be determined by checking the pH of the sample. But the titration is done to obtain the value in ppm. Since the report is given in ppm after the lab test.

⇒ 2. Instrumentation Laboratory :-

(i) Electroconductivity meter :-

→ This is used to check the electrical conductivity of the sample

→ The level of ions / number of ions / quality of water is tested.

→ To know the conductivity, Calibration must be known. (millicyanin is converted microcyanin)

- KCl - 0.01 molar is taken
- Temperature is set to → 1.94.
- 50ml of sample is taken.
- Conductivity = 1.412
- ~~pota~~platinum electrode is used to check the conductivity.
- Before using it should be always washed with distilled water.

(ii) pH meter :-

→ It is used to check the pH value of the sample used for irrigation purpose

→ Calibration of pH = 4, 100 ml sample

pH = 7.9

(iii) ion meter / Fluoride meter :-

→ It is used to check the present of different types of ions.

→ A fluoride meter is used to check the fluoride ion in the sample.

→ NaF = 0.021ppm

→ The electrode should always be kept dipped in distilled water for the proper working in any sample.

(iv) U.V. Spectrometer :-

→ It does not have manual involvement

→ It works on it self i.e, self testing

→ Directly sample is prepared and a tube having the sample's bar code is place according to it

→ Reading are given by the meter itself

→ Since it scans the readings on itself it doesnot involve any manual procedure after keeping the Bar code of the desired sample / ion.

⇒ Bacteriological Laboratory :-

Nephaloturbidity meter :-

→ Sulphate is measured using this meter.

→ Calibration = 100 ppm
for Sodium sulphate

Capacity = 200 ppm

→ Turbidity can be measured using the meter

→ Distilled water is taken and the meter is set to zero at 50ml dilution

→ Readings are noted.

* PPm Conversion :-

→ Volume of the sample x Strength
= PPm.

SAR = Specific absorption rate

→ It is the measure of rate at which energy is absorbed when exposed to radio frequency.

→ It is mainly useful for growing crops etc

RSE ⇒ Reactive sputter Etch.
~~Relative standard error~~

→ used to check the quality of seeds for growing crops.