
Dr. K. GEORGE VARGHESE
PRINCIPAL
Pushpagiri College of Dental Science

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# FIELD PROGRAMMES

## A VISIT TO WATER PURIFICATION PLANT

Place of visit : Water treatment plant, Thiruvalla. Date of visit:

### DETAILED REPORT OF THE VISIT

As a part of our public health dentistry curriculum, we the final year students went on a visit to water treatment plan in thiruvalla. We started from our college at 10:30am. We were accompanied by Dr. Shibu. Thomas. Sebastian. The water treatment plant was located about 4 km away from our college.

Initially we were briefed about the chemical chamber in a brief introduction regarding the working of the plant were given by the chemist on reaching there. We were taken to storage unit of lime & alum. Lime was stacked in sealed & alum in the flocks, both of which are required for quick chemical mixing in the water treatment. The plant capacity was about 3.3 million litres/day. The plant distributes water over a wide area which included upper Kuttanadu, Chengannur, Mallapally, Kunnamthanam. Source of water is from the deep wells in banks of Manimala River.

Water received from manimala dam undergone chemical mixing using alum & lime. As a result, flocculation occurs & turbidity of water is decreased. Later water is sent to the airator where water undergone natural purification for removal of physical impurities. In the next step, water is sent to 3 tanks of equal capacities for sedimentation. After sedimentation, pure water is moved to the filter house.

The sand bed are setup of either side of central channel,

through which water flows in & perforate the sand. The sand bed is divided into 4 layers - rock, gravel, coarse-sand & fine sand. Water filtered by sand is collected in the filter bed chamber beneath it. Here compressed air & water are applied & as a result filtered impurities are seen flocking on water. Following which pure water is rushed out & precipitated. This technique is called backwashing process. This process is done every week & sand bed is changed once every year.

While water is carried out in filter chamber. Piper carrying chlorine gas is opened into it at 2 kg/cm² pressure. Water is then, transported to pump where 3 motors of 600 hp pump water into that of 2 lakh capacity. This water is in turn supplied to hilly areas. Sometimes 2 chlorine bed is used to measure the quantity of chlorine content.

It was quite an informative visit for us as we were able to understand the importance of water conservation & its storage for daily use. It took about 2 hours for exploring the water treatment plant & we left the place at 1:00pm. The experience made us aware regarding the complex procedure undertaken by authority to maintain the quality of water for human use.

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Dalia Dental Care

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To

Whomsoever it may concern.

This is to inform that, as a part of public health dentistry dental clinic visit program, Miss Greeshma M S, a student of Pushpagiri College of Dental Sciences, visited my clinic on 10/09/2020.

Yours sincerely

(Chief Surgeon).

Dr. ASHWIN T. KOSHY. MDS
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# FIELD PROGRAMMES

## A VISIT TO A DENTAL CLINIC

Place of visit: Dalia Dental Care; A Multi Speciality Dental Clinic, Central Bank of India Building, Society Junction, Powdikonam, Thiruvananthapuram

Date of visit: 10/09/2020.

### DETAILED REPORT OF THE VISIT

As part of our curriculum, I visited a dental clinic, Dalia Dental Care, Central Bank of India Building, Society Jn., Powdikonam, Thiruvananthapuram on 10th of September 2020. This clinic was situated within immediate limit of town. The building was on rent (1000 rupees/month). The chief dentist was Dr. Ashwin. T. Koshy, MDS [Prosthodontist & Implantologist]. He had one receptionist & one assistant dental nurse. Consultant doctors were Dr. Shameer, MDS [Orthodontist]; Dr. Jijo, MDS [Orthodontist]; Dr. Rakesh, MDS [Endodontist]; Dr. Rahul, MDS [Endodontist]; Dr. Mathew, MDS [Oral & Maxillofacial surgery]. Working time of clinic was from 9:00am to 1:00pm & 2:00pm to 7:00pm. On sundays, treatment was not given. The clinic consists of a working area, reception area, sterilisation room & laboratory area. The waiting area was spacious & has sufficient number of chairs for patients. The clinic spans over an area of 1190 sq.m which includes ~180-200 sq.m of reception & waiting area; 650 sq.m of treatment area along with x-ray area; 90 sq.m of sterilization area & ~80-100 sq.m of laboratory area.

The clinic had 2 dental chairs, fully automatic mad of the company Confident. Equipment for lab uses were arranged next to clinical area. Sterilization was done

using autoclave - B class [Melag] & cold sterilization. The compressors were placed outside at surface level. Parking facility, ventilation, electrical, water & drainage system were the main factors taken into consideration while construction of building. The clinic also had facilities for waste management via IMAGE Segregation of waste was done using colour coding given by IMAGE & were collected & disposed off on alternate days at morning time. Needle disposal was done by Needle burner of the Company Confident. The type of X-ray used were fixed - IOPA & RVG. The filling materials used are of the company 3M, G.C. Corporation & Dentsply Sirona. The clinic was IDA approved. Various permissions were obtained before starting clinic which include permissions from pollution control board [Certificate], Atomic Energy regulation board [Certificate], Indian Medical Association Goes Ecofriendly (IMAGE) [Certificate] & Municipal Corporation.

Dr. Ashwin explained all the procedures & working of the clinic as well as treatment charges. He also demonstrated all the covid-19 protective protocols followed in the clinic which included wearing PPE kit, face shield, N95 mask, surgical mask, gloves, open ventilation by keeping windows open & A/C shut; 1% hypochlorite wipes & 0.2% chlorhexidine gluconate mouthwash. A triage form was also given to patient prior to the treatment. At last I took a photo with Dr. Ashwin & received a prescription letter signed by him.

This visit helped me to know about how dental offices & clinics work & also got an idea about setting up of a dental clinic.

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MC FAST VISIT

As a part of curriculum of public Health Dentistry Department we the final year Students visited MACFAST College, Thiruvalla. We were accompanied by Dr. Renu Roopak and Dr. Shibu Thomas. We reached Macfast college by 12:30 pm. The Macfast college is situated around 2 kms from thiruvalla town. We were received by the Principal of the college Rev. Dr. Pradeep Vazhathoramalayil. He warmly welcomed us and encouraged us to familiarise with the biocampus and various activities of Radio Macfast 90.4 FM station.

MACFAST is a post graduate and research institute started in the year 2001, with the objective of offering specially designed courses in business management, Information Technology and Bioscience.

Macfast is owned and managed by corporate educational agency of catholic arch diocese of thiruvalla with his Grace. Rev. Thomas Mar Koorilos as President and Patron. Macfast is located in the commercially active part of thiruvalla with a built up area of 300000 sq. feet. The college administration with the director under the overall supervision of principal. The courses offered here are MCA, MBA, Msc Biochemistry, Msc food science, Msc plant biotechnology, Msc Bioinformatics, Msc physiomedical science. The infrastructure of the institution consist of two campuses. Main campus hosting MBA and MCA programmes. The two campus accomodate classrooms, conference halls, laboratories, hostels, libraries and area of recreation and entertainment. We were led to the Bioscience lab where the E. coli test is detected. Purity of water was demonstrated by one of the student. The set of 5 testtubes were taken out in which one acted as test and one as control. Lactose broth was added and then incubated to testtube. A Durham's tube

was introduced in an inverted position and water to be tested was added. Then we moved to the campus community radiostation. Radio Mactast 90.4 is the first campus community radiostation in state and fourth in the country. We were given a brief demonstration of working of radiostation. Then we were taken to the place where solar panels were arranged. Mactast is the first institution to own a solar power. With that we came to end of our visit. We enjoyed our visit to Mactast college which is equipped with talents, technology along with experienced faculty. It was really enlightening experience for us.

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# FIELD PROGRAMMES

## A VISIT TO WATER PURIFICATION PLANT

Place of visit: Water treatment plant Thiruvalla. Date of visit: 21-04-18

### DETAILED REPORT OF THE VISIT

As a part of public health dentistry curriculum, we final year student had an opportunity to visit the water treatment plant in thiruvalla, we started from our college at 10 am. We were accompanied by Dr. Rino Roopak Soman and Dr. Shibu Thomas Sebastian. The plant is nearly 4 kms from our college. We were divided into groups.

Initially we visited the chemical guarded by chemist and were given a brief introduction about the working of plant. It has got pumping capacity of 33 million litres / day. This plant distributes water over a wide area which includes upper kuttanad, Changanoor, Mallapally, Kareeyoor, kumumtharam. Besides this there is a tank which collects water from kallissery water treatment plant and distributes it to Thiruvalla Mediicity.

The source of water is from deep wells on banks of Manimala river. The well is filled with two motors of 250 Hp and this tank is opened at the chemical house where lime and alum are added. Lime helps to kill bacteria in water. This raw water is divided into three channels.

As a result flocculation occurs and turbidity of water is decreased. After mixing water is send to the aerator where the undergoes natural purification for the water

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undergoes natural purification for the removal of physical impurities in the next step. This water is send to 3 clarifiers of equal capacity for sedimentation. After sedimentation water is sent to filter house.

In the filter house natural sand bed is used to filter the water. The sand beds are set up on either side of central channel through which water flows in and percolate the sand. The sand bed is stratified into 4 layers - Rock, gravel, coarse sand and fine sand water is filtered. This way is collected in filter bed chambers beneath it. When the filter bed gets saturated with impurities compressed air & water is applied to remove the impurities in the form of flocks by a process called back-washing. It is done every one week & sand bed is changed every one year.

After filtration, all physical impurities are removed and the remaining impurities will be chemical in nature, which ~~water~~ is carried out through the filter chamber, pipes carrying chlorine gas is opened into the it at 2 kg/m² pressure.

Water is then transported into pump house where 3 motors of 60 MPa each pump water into tank of 3.3 million Lakh capacity. The tank is conical in shape. This water is then supplied to hilly area. The chemists also mentioned about a test to determine the level of chlorine in the treated water which should remain 2ppm. She also mentioned there is a specific lab in the treatment plant for checking quality of water.

It took us about 2hrs in exploring the water treatment plant and we left the plant about 1:00pm. The visit was indeed informative, a visual experience of the learnt knowledge. It made us aware of complex procedure undertaken by authority to maintain the quality of water favourable for human consumption.

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**Prof. (Dr.) Nandakumar Kalarikkal**
*Director*

23rd October 2017

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that the interns of 2017 batch Pushpagiri College of Dental Sciences, Thiruvalla, along with Principal Dr K. George Varghese and Dr Nebu George Thomas visited International & Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Kottayam, Kerala on 20.10.2017. The students and faculty were allowed to visit the Nano Matreials Synthesis lab, Nanobiology lab and Instrumentation facility of the centre.

With warm regards

**Nandakumar Kalarikkal, M. Sc., Ph. D.**

INTERNATIONAL & INTER UNIVERSITY CENTRE FOR NANOSCIENCE & NANOTECHNOLOGY
M.G. UNIVERSITY
KOTTAYAM