A TECHNICAL REPORT ON

STUDENT'S INDUSTRIAL WORKING EXPERIENCE SCHEME

(SIWES)

HELD AT

INLAND SPARKLING WATER,

3, OLASUPO STREET KETU LAGOS STATE

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DEDICATION

This siwes report is dedicated to the Almighty Allah and my beloved parents **Mr. and Mrs. Lasisi** for their supports and unconditional love.

ACKNOWLEDGEMENT

With gratitude I want to acknowledge the almighty Allah first for his guidance, protection, love, towards me and my family all though the period. I want to acknowledge the staff of Inland Sparkling Water, Ketu Lagos for their endless love care and support throughout the cause of my stay in their company. I want to acknowledge my siblings for being supportive and understanding during my S.I.W.E.S. Program. I acknowledge my supervisor from Kwara State Polytechnic, Ilorin for supervising my work. Thank you.

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CHAPTER ONE

1.1 BACKGROUND OF SIWES

The SIWES is a skill training program and forms part of the approval of minimum academic standard in various degree programs in the various Universities. It is an effort to bridge the gap between theory and practical. According to Ochiagha (1995) practical is learning without which mastery of an area of knowledge might be difficult to achieve. The SIWES is a planned and supervised training intervention based on stated and specific learning of career objectives and geared towards developing occupational competence of the participants. It is a program required to be undertaken by students of tertiary institutions in Nigeria pursuing science and educational courses. The work experience program gives students the opportunity to be part of the actual work situation outside the classroom. Usually SIWES last for four months in Polytechnics at the end of ND 1, four months in colleges of education at the end of NCE 2 and six months in the Universities at the end of 300 or 400 levels depending on the discipline.

1.2 AIM AND OBJECTIVES OF SIWES

SIWES provides avenue for students to acquire industrial skills and experience in their approved course of study and also prepares students for their industrial work situation after graduation.

The objectives of the students' industrial training work experience scheme are:

- To provide an avenue for students in the Nigerian tertiary institutions to acquire the basic industrial skills and experiences that are relevant to their course of study.
- To prepare students for the work situation they are likely to encounter after graduation.
- To make transition from the university to the world of work easier hence enhancing students contact for subsequent job placement after graduation.

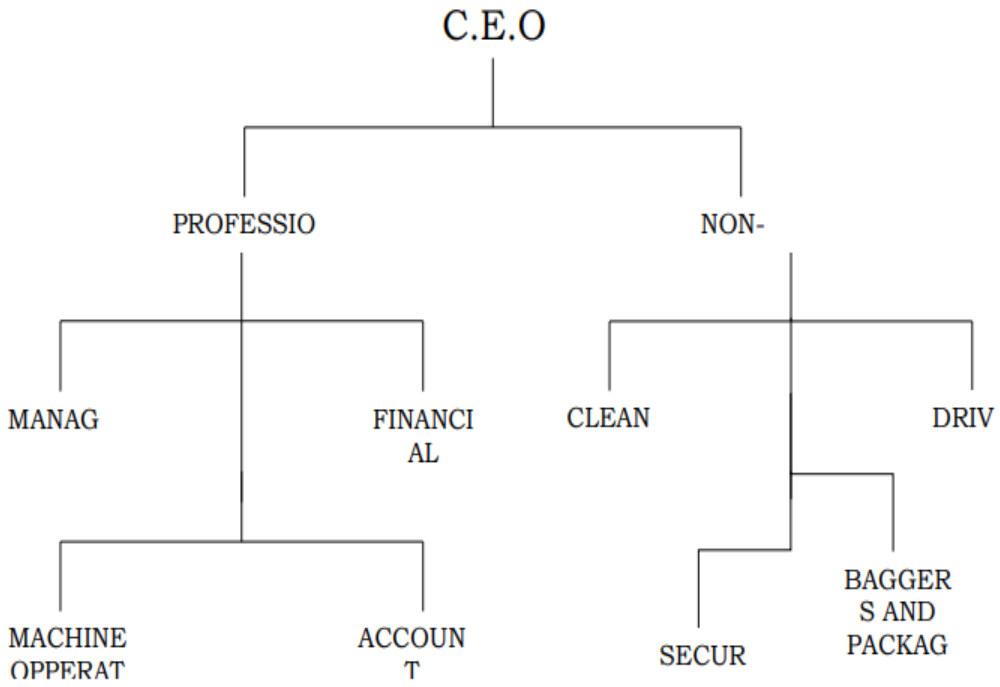
- To expose students to work techniques and methods of handling equipments and machinery that may not be readily available in their institution of learning.
- Provide students with an opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between theory and actual practice.
- To enlist and strengthen employers involvement in the entire educational process of preparing university graduates for employment.

1.3 BRIEF HISTORY OF INLAND SPARKLING WATER

I had the opportunity to carry out my SIWES in two factories which are into consumables. One is with "Inland Sparkling Water" which is located at 3, Olasupo Street Ketu Lagos State. At Inland Sparkling Water I was trained in bread production, equipments utilization, ingredients mixing, sales, sales management, and lot more. While I was able to undergo training on water production, treatments, production equipments, equipment utilization, sales, sales management, and lot more. Patbrista Ventures is a private organization that is into the production of sachet water. It was established in the year 2013 by Mr. Olusegun Oladipupo. Their principal goals are to provide clean, adequate, hygiene, and affordable water to the table of every home at affordable price.

Quality control unit is one of the units in the headquarter that was established in order to ensure the quality of water produced and supplied by the Board is safe enough to meet the standard requirement by World and National Health Agencies. The unit also analyses water samples brought by commercial table water producers, residence overhead tanks for confirmation and for students' researches.

1.4 ORGANIZATIONAL STRUCTURE OF INLAND SPARKLING WATER



CHAPTER TWO

2.0 WORKING EXPERIENCE

Knowledge Acquired During the Attachment

DAILY ROUTINE

The daily routine in the Inland Sparkling Water table and sachet water limited includes the following: sweeping of each unit, mopping of the floors, cleaning of the machines and water tanks, checking temperatures of the sterilizers frequently and more.

2.1 WATER TREATMENT

Water treatment is a process designed to remove colors, odors, turbidity as well as bacteria and other contaminants. By nature, water is known to be pure as it is composed of strongly bonded atoms of hydrogen and oxygen. However the water supply across the globe has to share space with other things such as organic materials, minerals, chemicals and manmade pollution. This brings about undrinkable solution, since it can contain deadly bacteria and viruses among other disease causing agents. The process of treating water may have slight difference at various locations based on the plant's technology as well as the type of water that needs to be treated. The following section talks about standard process of water treatments;

2.1.1 COAGULATION/FLOCCULATION

Coagulation is the addition of liquid aluminum sulfate or alum and polymer to raw or untreated water. The resulting mixture causes the dirt particles in the water to stick together. Then, the group of dirt particles attached together forming larger particles named floc that can easily be removed via filtration or setting.

2.1.2 SEDIMENTATION

When water and floc undergo the treatment pro cess, they go into sedimentation basins. There, water moves slowly, making the heavy flocs particles settle to the bottom. Floc, that accumulates on the bottom is known as "sludge". This is carried on to the drying

lagoons. Direct filtration does not include the sedimentation step and the floc is just removed by filtration.

2.1.3 FILTRATION

In filtration, water passes through a filter, which is made to take away particles from the water. Such filters are composed of gravel and sand or sometimes called anthracite. This process gathers together impurities that float on water and boosts the effectiveness of disinfection. This process is regularly cleared by means of backwashing.

2.1.4 DISINFECTION

Before water goes into the distribution system, it is disinfected to get rid of disease causing bacteria, parasites and viruses. Chlorine is also applied since it is very effective.

2.2 WATER TREATMENT PLANT

2.2.1 DESCRIPTION OF SYSTEM

The water treatment plant is made up of three integrated treatment system

i. Raw water pretreatment
ii. Make up water treatment
iii. Waste water treatment

These systems are designed to meet

1. Boiler feed water (make up water)

2. Steam purity

3. ALZD requirements

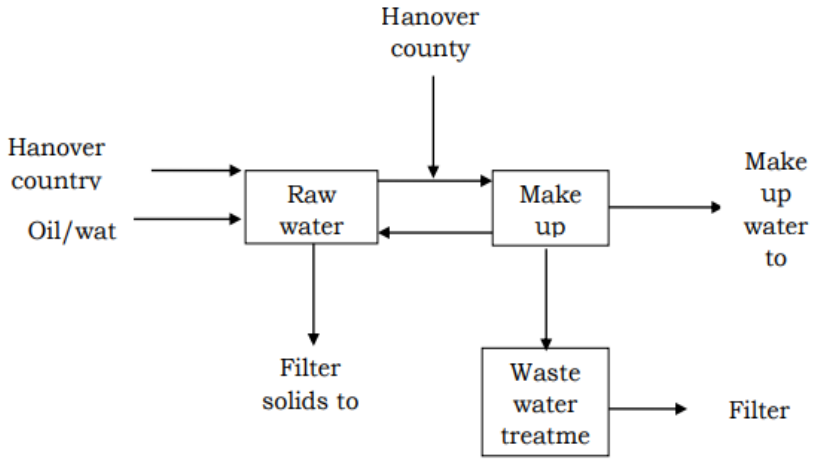


Fig. 2 WATER TREATMENT PLANT

The plant takes water from both the waste water and portable water facilities at Hanover County and discharge solids in form of filter cakes from both the pretreatment and waste water treatment plants.

2.2.2 RAW WATER PRE-TREATMENT

The raw water pretreatment plant is designed majorly for solids removals from the incoming Hanover County sewage effluent, backwash water and waste water from the oily water collection system. Raw water enters a coagulation chamber followed by a clarifier and dual media depth filters.

2.2.3 MAKE UP WATER TREATMENT

Treated raw water is mixed with portable water and pumped to the boiler feed water treatment system. This system is designed to remove 99% of the dissolved minerals and provide high purity water to the boiler. The mixed water flows through a reversed osmosis plant operating at a recovery of 80% and an average salt rejection of 95%. This process is used to remove carbon dioxide and a mixed bed demineralizer.

2.3 HOW CHLORINE IS USED TO TREAT WATER

Chlorination is the process of adding chlorine to drinking water to disinfect it and kill germs. Different processes can be used to achieve safe levels of chorine in drinking water. It is achievable as compressed elemental gas, sodium hypochlorite solution (NaOCl). The chemical could be harmful in high doese when they are added to water. Chlorination is the best way to provide safe water to the end users. Chlorine kills pathogens such as bacterial and viruses by breaking the chemical bonds in their molecules. Disinfectants that are used for this pujrpose consists of chlorine compounds which can exchange atoms with other compounds such as enzymes in the bacteria and other cells. When enzymes come in contact with chlorine, one or more of the hydrogen atoms in the molecule are replaced by chlorine. When chlorine is added to water, it forms; CL2 + H2O --> HOCL + H^+ + CL^- 2.3.1

TYPES OF CHLORINE USED IN WATER TREATMENT

A. Chlorine gas

i. It is greenish yellow in color and heavier than air
ii. It's high toxicity makes it an excellent substance for drinking
iii. it is a respiratory irritant
iv. When used to treat water, it becomes harmless
v. it is the least expensive form of chlorine

B. Chlorine Hypochlorite

i. It is a white solid with a bad odor
ii. It must not be stored near wood, cloth or petroleum products
iii. It increases the ph of the water being treated.

C. Sodium Hypochlorite

i. It is recognized as household bleach
ii. It is light yellow liquid that has a short shell life
iii. It requires a lower concentration to treat water
iv. Addition of chlorine during water treatment is summarized into 4 parts which are as follows: a) Pre-chlorination of raw water b) Addition of various points in

the treatment process c) Addition during distribution, and d) Miscellaneous use during maintenance activities

2.3.2 USES AND BENEFITS OF CHLORINE CHEMISTRY

a) Chlorine chemistry helps keep drinking water and swimming pools safe

b) Chlorine chemistry is used to manufacture household bleaches/disinfectants

c) Chlorine chemistry helps provide safe and abundant food by protecting crops from pests

d) Chlorine chemistry plays an important role in energy and environment

e) It is used in advanced technologies

f) Building and constructions

g) Defense and law enforcement i.e. in building bullet resistance vests

h) Transportations i.e. trains and automobiles

2.4 PRODUCTION ROOM PRECAUTIONS

There are basic rules and regulations that must be followed while working in the production room to avoid dangers or any accidents. And these are grouped into different categories which includes: Hand washing techniques, personal protective and machinery safety.

2.5 HAND WASHING TECHNIQUE

i. Wet hands and apply liquid hand washer
ii. Clean fingers, fingernails and thumbs
iii. Rinse with clean water

2.6 PERSONAL PROTECTIVE ACTIONS

i. Laboratory/production hat must be worn whenever we are in the production room
ii. Reagents label must be read properly before using it
iii. Never eat or drink or smoke in the production room
iv. Covered footwear (white preferably) must be worn at all times

CHAPTER THREE

3.0 DEFINITION OF TERMS

3.1 PRODUCTION EQUIPMENTS AND THEIR USES

1. ROW:- This is a material in form of foils put into the machine to package the sachet water

2. DINGLI MACHINE: This is the machine used in the production of only sachet water **3. RESERVOIR:** This is where water are being kept until production is needed. And it must be kept neat at all times. It is called PVC water tanks (Black color preferably)

4. SUBMERSIVE WATER PUMPING MACHINE: This is usually installed deep down in the ground. It is used for pumping water from the underground

5. SURFACE PUMPING MACHINE: This is usually not inside the ground but on the surface. It is also used for pumping water from the underground

6. AERATION FAUCETS:

7. PVC PIPES AND PUMBING FITTINGS: This is used for transmission of water from one facet to another

8. SHORT STOOLS OR CHAIRS: This are used for sitting. It could either be plastic or steel. Note:- Understand the operating procedures of a machine before using it or have a guide.

CHAPTER FOUR

4.0 SUMMARY, CONCLUSION AND RECOMMENDATION

4.1 SUMMARY

During this period, I was well trained on how I can manage a pure water factory to an extent, how to operate some of the machines, the depth of a borehole for water, how to bake bread, sales and marketing of bread, bread production, production management, different chemicals used in water production, and lot more

4.2 RECOMMENDATION

Based on my experience during the industrial training I hereby recommend the following:

1.The institution should assist in securing placement for students by liaising with established organization.

2. The institution should improve coordination during the SIWES program to help assess the quality of training under gone by the students.

3.This kind of program should be conducted often to expose students to the working experience or condition of the broadcast industry.

4. The student's supervisor from the institution should try to visit the student regularly during the industrial training

5. The student should endeavor to stop truancy towards work and improve their relationship with the employees and their co-workers to make out the best during the training program.

Lastly I will also like recommend that this program should continue and future participants should develop more attitudes towards the programme because it helps one develop more interest in his or her discipline.

4.3 CONCLUSION

In conclusion, there were many things that I have experience and learnt during this period. The whole training period was very interesting, instructive and challenging. Through this training, I was able to gain new insights and more comprehensive understanding about the real industry working condition and practice. It has also provided me the opportunities to develop and improve myself in this field. All of this valuable experience and knowledge that I have gained were not only acquired through the direct involvement in task given but also through other aspect of the training such as work observation, interaction with colleagues, superior, and other people related to the field. From what I have undergone, I am very sure that the industrial training program has achieved its entire primary objectives. It's also the best way to prepare students to face the real life task that will surely surface after academic activities. As a result of the program now I am more confident to build my future career which I have already started.