INDUSTRIAL TRAINING FINAL REPORT

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Abstract/Executive Summary

Industrial Training is one of UiTM's graduation requirements. A professional mentality can be greatly cultivated by well-planned, well-implemented, and well-evaluated industrial training. It encourages an understanding of the industrial approach to problem solving, which is founded on an in-depth knowledge of the organization's procedures and operating principles. Industrial Training's goal is to give students the opportunity to apply and incorporate the concepts and theories learnt in class. During their Industrial Training session, students will also be graded on the assignment they were assigned, their daily logbook, and their writing report with presentation. This report written by Mohammad Syafie bin Abdul Said to explain the input gained during 24 weeks of industrial training in One Gasmaster Sdn Bhd which guided by En Zamzimi bin Mohamed.

The report began with the explanation the term of Industrial Training and the objective of the Industrial Training as the requirement need to be through by a Diploma student. This chapter provided the industrial schedule that followed by the student during the Industrial Training. The schedule included the working time, working day and a few other information regarding the schedule during working in the company. The information of the supervisor also provided at the end of this chapter.

Next chapter, this report gives an overview of the Company profile such as the company's history, location, and activities, among other things. The vision and mission of the company also listed in this chapter. It also showed the organization chart in One Gasmaster Sdn Bhd. The main product and service provided to the client also explained in this chapter.

At the chapter 3, the report explained overview of the training. The internship at One Gas Master Sdn Bhd that is the subject of this report lasted 24 weeks, from February 20, 2022, to August 4, 2022. The trainee was placed in the Fixed Service Department for the duration of the internship.

Chapter 4 explained details of experiences got through by the students in the company. Students were exposed to a real working environment in addition to learning how to work in teams and get to know their co-workers. It also enables students to show creativity and individuality while organizing and planning the tasks given within a set time constraint. Last but not least, students also learnt professional and ethical issues besides learnt about health environmental issues. All of these attributes are important as their preparation before students enter the real working life.

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CHAPTER 1

INTRODUCTION OF INDUSTRIAL TRAINING

1.1. Overview

Students in particular programs are required to complete Industrial Training (IT) at all levels of higher education institutions (IHL). Industrial training programs were established to strengthen the necessary competencies and raise the level of graduates who could work. Industrial Training (IT) refers to exposing students to real-world engineering experiences and involving them in Chemical Engineering projects prior to graduation. One of the conditions for the award of a diploma in chemical engineering is that the student MUST complete at least twenty-four (24) weeks with twelve (12) credits of industrial training during semester six (6) OR after passing all of the courses studied from semester one to semester five.

The goal of Industrial Manship is to introduce UiTM students to industrial culture and the workplace while also improving student employability by developing their industrial abilities. They will also attend several briefings that serve as training for the trainee. This internship will be for 24 weeks, beginning on February 21 and ending on August 4, 2022. The student must report to the employer at the time and on the date specified at the Industrial Training briefing. One (1) Lecturer Evaluation will be given to the student during the internship time in order to evaluate their performance. Two (2) weeks after the internship ends, the logbook and finalized report must be sent to the college both softcopy and in hardcopy.

Courses in industrial training (IT) provide students with learning chances in the workplace so they can gain real-world experience and increase market trustworthiness. The industrial training aids in producing chemical engineering technician graduates with excellent technical skill and soft skill competency when it comes to preparing the students as engineering technicians. Since all core and elective theories can be utilized in industrial training, it is expected that students would be able to approach problems and projects given to them by supervisors in inventive and creative ways. Additionally, the industrial training boosts students' self-confidence and enhances their collaboration and communication abilities. Students are also required to practice engineering with a high degree of integrity, ethics, and accountability.

1.2. Objective of industrial training

The basic purpose of industrial training (IT) is to provide students with learning access to employment so they can gain real-world experience and increase industry trustworthiness. The industrial training contributes in producing chemical engineering technician graduates with excellent technical skill and soft skill competency when it comes to preparing the students as engineering technicians. The other goals are:

- Mastering technical skills
- Gaining essential background knowledge
- Perfecting interpersonal skills (soft skills)
- Building a Network of Contacts

1.3. Industrial Training Placement

1.3.1 Industrial Schedule

Normal working hours	**8 hours**
Day of working	**5 days a week**
Work in	**8.30 am**
Break hour	**Monday - Thursday** • **1.00 pm to 2.00 pm** **Friday** • **12.30 pm to 2.00 pm**
Work out	**5.30 pm**

Table 1.1: Industrial Schedule

CHAPTER 2

COMPANY PROFILE

2.1 Background

Figure 2.1: One Gasmaster Sdn Bhd. Logo

One Gasmaster Sdn Bhd is a business company that providing product and service. The company is own by Malaysian but have a few businesses relationship with foreigner company. The CEO of this company is Mr Ivan. The company is still expanding with more than 40 staffs. The head quarter of the company is located in 18, Jalan PJU 3/48, Sunway Damansara, 47810 Petaling Jaya, Selangor. The office operated from 9 am – 5 pm, Monday to Friday. If any service then the activity will follow the client timing within weekday which is Monday to Friday.

2.2 History

One Gasmaster Sdn Bhd was established in 1998. Our initial business activity was to provide gas detection system solutions. Backed by overwhelming success and a proven track record, the company subsequently ventured into related fields. Today, One Gasmaster Sdn Bhd is proud to claim industrially recognized expertise not only in gas detection system solutions but also gas analysers, industrial hygiene monitoring equipment and process analysers. One Gasmaster Sdn Bhd achieved ISO 17025 accreditation for sound calibration in 2008 and MS ISO 9001:2008 in 2010. Gas detector and analyser calibration in 2011.

2.3 Vision and Mission

Vision

Customers' first Choice.

Mission

- To give solutions that professional, high quality and add value to customers.
- To deliver our services efficiently, accurately and within reliable turnaround time.
- To give the employees the platform to pursue the dreams and happiness.

2.4 Organization Chart

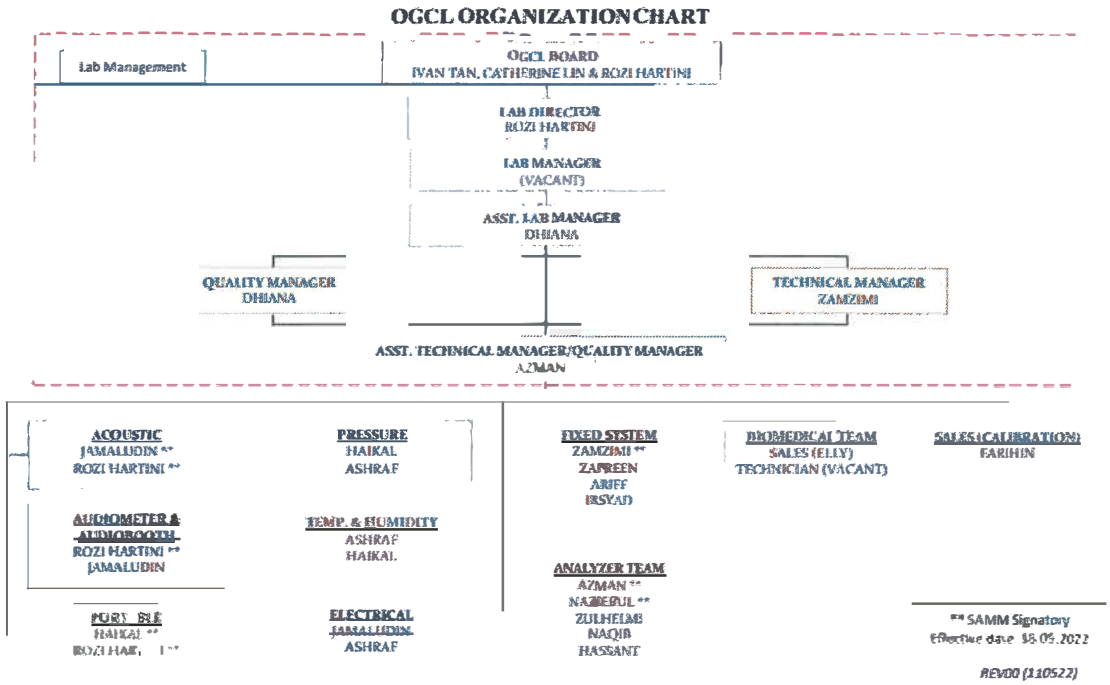

Figure 2.2: Organization Chart

2.5 Main Products /Service Provided to the Client

Main products

Biogas analysers, CEMS, dust monitor, gas analyser, gas detector, indoor air quality, respirator fit testing, sample pump and probes, closed loop sampling system, personal protective equipment UVEX, sound and vibration, personal air sampling pump, dual ear vibration system.

Service provided to the client

- Sound acoustic calibration.
- Gas monitoring equipment calibration.

CHAPTER 3

OVERVIEW OF THE TRAINING

3.1 Introduction

One Gasmaster Sdn Bhd offers a variety of employment over the training's 24 weeks, including to provide technical report, perform calibration job, perform troubleshooting/ repairing works, prepare calibration data and Prepare certificate. These works were working scope of the department of OGCL-Fixed System in One Gasmaster Sdn Bhd. The work done by the help of the seniors in the department as the hierarchy of instruction began with the instruction from En Zamzimi then followed by the seniors then only the works passed to the trainee.

3.2 Summary of the training and experience gained.

The purpose of this training is to develop students to a real working life where they can acquire new skills, understanding, and competencies while somehow putting all of the theory and knowledge they've studied into application. Higher student quality and proactivity will come from this industrial training, which will also foster a positive working connection between the institution and the firm. Through this opportunity, students can develop their skills in a range of activities, including analysis, calibration, and other on-site jobs. All of the duties, knowledge, and tasks that were learned and completed over

the 24-week industrial training period will be summarized in this Chapter. Highlights of the jobs that trainees completed during their training course are included below, along with sufficient descriptions of each one.

Task 1: Provide technical report

A technical report is a written account of the procedures, accomplishments, or results of technical or service. Additionally, it might contain the service results and recommendations. In every service done, all the data gained were recorded and listed in detail such as the condition of the gas detector, the function of the sensor of the gas detector, condition of the gas detector control panel and any other relevant details. The details were really important to help determine the source of problem if happen during the service. The student will accompany the senior during the service and the senior provided with technical report book. All the data recorded will be transfer into the technical report book for more proper procedure. The report will have two copies which one copy for the company use while another one provided to the customer as the evidence of the service done and for any action need to be done in the future. There were also suggestions that provided in the technical report as guide to the customer regarding any relevant issue.

Task 2: Perform calibration job

The process of calibrating a device involves comparing its measurement data to those of a calibration standard with known accuracy. In OGCL-Fixed System department the calibration job usually refers to the calibration of gas detector. A gas detector is a device that detects for gases in a region, frequently as part of a safety system. Operators in the vicinity of the leak may hear a gas detector's alarm, which will give them the chance to evacuate. Because many gases can be toxic to operators, this kind of equipment is crucial. Along some period of time the reading of the gas detector may distracted by some factors. This will result of not tally result and may give wrong reading that may triggered the alarm or for more fatal result is by not be able to detect the leaking gas even the leakage occurs. The steps to do calibration began by inhibiting the input to ensure that the alarm will not be triggered during the calibration. Open the junction box of the detector connect a digital volt meter to the test points marked ‘TP1’ and ‘TP2’ on the amplifier PCB. The digital volt meter should be set to the dc mV range. Perform the zeroing to the gas detector until reach the suitable reading which is depend on the type of the gas detector used then purge suitable

gas to the sensor and adjust the reading until reach the appropriate reading then remove the gas and wait until the sensor settle down before rechecking the zero setting. If everything done then close junction box of the gas detector, ensure it close tightly. The detector then is in operational.

Task 3: Perform troubleshooting/ repairing works

Troubleshooting is a type of problem resolution that is frequently used to fix operations on a gas detector system. The usually problem faced was the faulty of sensor. The sensor will be suspected to have problem if the respond toward the zeroing or calibration were low or no respond. The sensor that suspected to have problem will be bring back to the lab. Then the sensor will be installed into the gas detector in the lab. The function of he sensor will be examined and all the data recorded. The suggestion will be given to the customer for the further action.

Task 4: Prepare calibration data

The calibration data is the data recorded for the documentation of the OGCL-Fixed System. There is form so called as calibration data form that need to be fil regarding the detail of the service that have been done, person in charge and any other relevant issue. This calibration data filled by referring the data recorded in the technical report. The checklist of equipment uses also done by filling the site checklist form. The calibration data form, checklist form and the technical report compile together then located into the suitable file for company documentation.

Task 5: Prepare certificate

Preparing certificate is the final procedure in the flow of standard operational procedure of calibration. The certificate will be provided by One Gasmaster Sdn Bhd to the customer as the prove that their gas detector was calibrated by competence person.

3.2.1 Weekly Activities.

WEEKS	ACTIVITIES
Week 1	• Meeting with supervisor and senior about the job scope. • Read a few manuals about the work that will be covered during 24 weeks. • First visit site in Sunway University.
Week 2	• Visited expanding manufacturing in Kedah and learnt to use tube marker. • Visited a few more sites and learnt to do wiring. • Learnt how to test the function of gas detector and alarm.
Week 3	• Visited site in Kuala Lumpur. • Learnt how to use multi-meter. • Learnt how to purge gas. • Learnt proper way to do calibration and zeroing on gas detector. • Learnt to work in narrow spaces.
Week 4	• Went to a semi-conductor manufacture. • Learnt proper PPE used in semi-conductor manufacture. • Experience work at high. • Went to food manufacture. • Learnt proper PPE in food industry manufacture. • Learnt proper wear in high noise area. • Learnt to be professional when deal with problem in site. • Went to glass manufacture. • Learnt about safety work in hot working area. • Learnt proper way to deal with ammonia gas.
Week 5	• Went to a railway station in Johor Bahru. • Learnt about Permit to Work (PTW). • Learnt to communicate with client. • Learnt about how weight of gases can determine the right location of gas detector should locate.

	• Learnt government agency working procedure. • Learnt to do report of working. • Learnt safety of working in railway station. • Learnt to be patience working with huge amount of work.
Week 6	• Visited Custom, Immigration and Quarantine Complex (CIQ). • Learnt safety working in place full with vehicles. • Learnt to communicate with client. • Learnt skills to ease work and applied ergonomics skills. • Made report of service.
Week 7	• Visited JB Sentral and CIQ. • Finishing work. • Finalize report. • Learnt to communicate with staff in site.
Week 8	• Learnt to find document in department drawer. • Dealt with tube tagging for wire. • Went to site visit. • Learnt gas detector zeroing and calibration. • Learnt wiring. • Applied safety precautions in site. • Went to Midvalley mall to do service. • Learnt procedure working in mall.
Week 9	• Learnt packaging gas detector. • Visit site to conduct training to client. • Learnt protocol working in Government premises. • Help supervisor buy stuff.
Week 10	• Packaging portable gas detector. • Went to site visit at Midvalley mall and Pet world manufacture. • Learnt about safety in boiler area. • Untidy stuff in office.
Week 11	• Did office work such as taking invoice and scanned. • Delivered check cell and picked power supply from customer. • Learnt configuring portable gas detector. • Did packaging order.

	• Went to site visit and applied safety working at height.
Week 12	• Went to site visit and did calibration service. • Went to semi-conductor manufacturer and did a few services. • Went to safety induction of semi-conductor manufacturer and learnt safety working in that manufacturer.
Week 13	• Went to site to meet client for signature of delivery order and gave invoice to client. • Do wiring and test the sensor that have problem. • Went to site to give invoice and signature of delivery order. • Went to site for changing new sensor.
Week 14	• Went to site for changing gas detector and service the gas detector. • Went to site visit at Putrajaya Gas District Cooling. • Learnt to work with full cover PPE. • Do gas checklist to determine contain of the gas cylinder. • Do wiring to test gas detector.
Week 15	• Do office work • Applied excel skills to do gas checklist.
Week 16	• Having skin disease. Absence.
Week 17	• Do gas detector testing. • Do wiring to direct current device and do gas detector testing. • Arrange files in office. • Help senior to test Flow, temperature, humidity control system.
Week 18	• Went to "PureCircle" company to do gas detector calibration. • Do calibration data form • Went to site to do calibration. • Learnt and follow other senior. • Went to a few control rooms and learnt working routine in the control room. • Do office work.

Week 19	• Went to site to do calibration. • Learnt to deal with control panel • Learnt how to stop the alarm during service. • Went to valves shop and learnt a few types of valves there.
Week 20	• Joined grand meeting and refresh the vision and mission of company. • Learnt about innovation and way to deal with client. • Attended fire drills training and learnt safety in office. • Went to site and do calibration.
Week 21	• Do office work. • Went to site visit and do calibration. • Learnt safety of wiring at control panel. • Learnt safety about gas detector.
Week 22	• Do calibration data checklist and arrange it into files of department. • Do certificate. • Took invoice for senior uses. • Went to NIOSH to help senior from another department. • Went to KLCC to do calibration of gas detector.
Week 23	• Went to site to do gas detector calibration. • Went to office to prepare stuff to be used on the next site visit. • Went to site visit to do calibration gas detector and learnt safety of gas detector. • Learnt to reset valve. • Joined safety induction conducted by client before enter site.
Week 24	• Do office work. • Collect sources for Industrial Training. • Finishing logbook and evaluation from supervisor. • Meet CEO for advice about working-life. • Presentation of Industrial Training.

Table 3.1: Weekly task

CHAPTER 4

DETAILS OF EXPERIENCES

4.1 Introduction

This chapter provides a detail of experiences gained and tasks performed over the 24 weeks of industrial training, including both social and technical activities. The following is a detail of each task of the internship, including major highlights and tasks that were finished.

4.2 Details of training and experience gained

4.2.1 Provide technical report

During the calibration all data need to be recorded. Those data technically recorded in service and calibration report. One Gasmaster Sdn Bhd has their own book of service and calibration report. One service and calibration report will have two copies which one for One Gasmaster Sdn Bhd keep and another one for customer reference.

In the service and calibration report, it will basically contain of basic information of the company included the client's name, specific location, type of system used, contact person in that site and the job description. Besides the other basic of information such as the team from One Gasmaster Sdn Bhd in and out for calibration service and the date of calibration.

Regarding the calibration issue, the service and calibration report will consist of the type of gas detector used in that company, condition of gas detector physically and condition of solenoid valve. Those all information put in the same time table. Then calibration result details explained on the next table. The details included the number of channels, location, zero condition, the span gas value, the reading before and after calibration and remarks. All the data filled if necessary. Student learnt to be more careful in writing to make sure no mistake done.

Next will be explaining about the job description and diagnostic. Usually in this space, it will explain what type of work done during the calibration service and data collected. Sometimes it also reminds about the condition of the gas detector or maybe the compartment inside it. The last one will be the recommendation and action need to be done by the client base on the data collected during the calibration service. If any damage happens for instance regarding sensor, then the team from One Gasmaster Sdn Bhd will bring back the sensor for test in lab and verify the problem.

At the bottom of the report will consist of the signature from senior from One Gasmaster Sdn Bhd and signature from client and stamp from the client. One copy will provide to the client and another one for One Gasmaster Sdn Bhd reference.

4.2.2 Perform calibration job

Calibration job suggested to be done at an interval of every six months when operating under normal conditions. The interval may be shortened if necessary, depending on requirements. The operational life of the sensors depends on the application, frequency and amount of gas being seen. Under normal conditions (6 monthly calibration with periodic exposure to CAL gas) the life expectancy of the flammable gas sensors is up to 3 years while the toxic sensors may be up to 18 months depending on the type of sensor as some may have a much shorter operational life than others, please contact Crowcon for assistance. Oxygen sensors should be replaced every 12 months.

Calibration service usually will be conducted by competence person in this field. During the Industrial Training student followed one senior that competence doing calibration service. Student role was to help necessary done by the senior. The senior will guide student about the procedure doing calibration service. Student will be provided with manual of the gas detector according to the type of the gas detector that going to be calibrated. There were few types of manufacturers that visited by student to do calibration services. Those manufacturers included semi-conductor manufacturer, palm oil refinery manufacturer, glass manufacturer, food manufacturer, sterilizer manufacturer, gas manufacturer, stevia manufacturer, restaurants and malls.

The various type of site exposed student with different type of working procedure. Student learnt basic way of working at those places. Student also meet a lot of people with different type of background. Meeting with different people can give idea to student on type of working that has high market and suitable with the student studies background.

Student also learnt safety of working with those different places. Student also got opportunity attended safety induction conducted by certain company. Student became more alert about safety in workplace and more focus on doing work. Moreover, student experienced wearing various personal protective equipment base on type of manufacturer they went for the service.

Senior that been followed by the student usually fully equipped with tools and equipment for calibration use. Student learnt to use all of the tools properly during the calibration procedure with guide from senior. Below are tools and equipment learnt by student.

TOOLS AND EQUIPMENT

No	Tools/Equipment	
1	Cylinder Gas	
2	Tube Hose	

3	Regulator	
4	Multi-meter	
5	Clip Probe	
6	Screwdriver	

7	Allen key	
8	Trimmer	
9	Wrench	

Table 4.1 Tools and Equipments used

Procedure in doing calibration

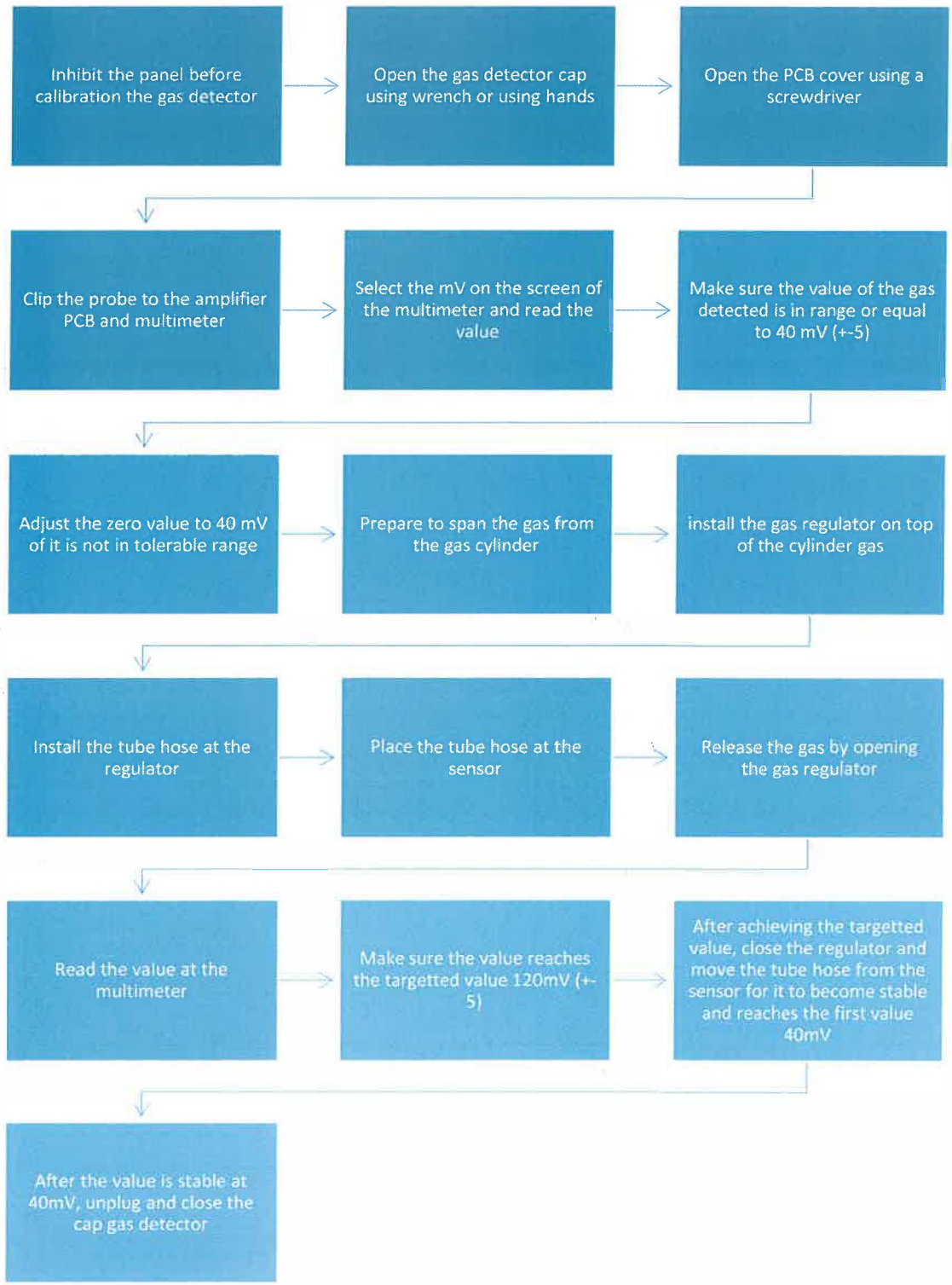

Figure 4.1: Procedure in doing calibration

GAS	LOW	HIGH	TWA	STEL
O2	19.5% vol	23.5% vol	N/A	N/A
CO	35 ppm[a, b]	70 ppm[b]	35 ppm[a]	200 ppm
H2S	10 ppm	20 ppm	10 ppm	15 ppm
SO2	2.0 ppm	4.0 ppm	2.0 ppm	5.0 ppm
NO2	3.0 ppm	6.0 ppm[c]	3.0 ppm	5.0 ppm
Cl2	0.5 ppm	1.0 ppm	0.5 ppm	1.0 ppm
ClO2	0.1 ppm	0.2 ppm	0.1 ppm	0.3 ppm
CO2	0.5% vol	1.0% vol	0.5% vol	3.0% vol
PH3	0.3 ppm	0.6 ppm	0.3 ppm	1.0 ppm
NH3	25 ppm	50 ppm	25 ppm	35 ppm
HCN	5.0 ppm	10.0 ppm	4.0 ppm	4.9 ppm
NO	25 ppm	50 ppm	25 ppm	25 ppm
HCl	2.5 ppm	5.0 ppm	2.5 ppm	2.5 ppm
H2	50 ppm	100 ppm	N/A	N/A
CH4	1.0% vol	1.5% vol	N/A	N/A
LEL	10% LEL	20% LEL	N/A	N/A
PID	100 ppm	200 ppm	N/A	N/A

Table 4.2: Gases standard concentration for triggering alarm

Sensor Type	Standard	Range	Maximum Overload	First Alarm Level	Second Alarm Level (where applicable)	Pre-Alarm (where applicable)
	Portables	Fixed Systems				
Flammable (Pellistor)	0-100% LEL	0-100% LEL	200% LEL	20% LEL	40% LEL	10% LEL
oxygen	0-25%	0-25%	30%	19%	23%	16%
CO	0-500ppm	0-250ppm	2000ppm	50ppm	100ppm	30ppm
H_2S	0-50ppm	0-25ppm	500ppm	10ppm	20ppm	5ppm
SO_2	0-10ppm	0-10ppm	100ppm	2ppm	5ppm	1ppm
CL_2	0-5ppm	0-5ppm	20ppm	0.5ppm	1ppm	-
NO_2	0-10ppm	0-10ppm	100*ppm	3ppm	5ppm	-
NO	0-100ppm	0-100ppm	500*ppm	25ppm	50ppm	-
HCN	0-25ppm	0-25ppm	100*ppm	5ppm	10ppm	-
NH_3	0-50ppm	0-100ppm	100ppm	25ppm	50ppm	-
HCL	0-10ppm	0-10ppm	100*ppm	5ppm	10ppm	-
O_2	0-1ppm	0-1ppm	10ppm	0.1ppm	0.3ppm	-
Acid Gas	0-10ppm	0-10ppm	50*ppm	2ppm	5ppm	-
Infrared (CO_2)	0-2%	0-2%	5%	0.5%	1%	-

Table 4.3: Standard concentrations for flammable gas

4.2.3 Perform troubleshooting/ repairing works

During the calibration despite of making service and calibration report, student also need to prepare if any troubleshooting or repairing works. Sometimes the problem needs to refer on the manual of the gas detector.

During the 24 weeks of Industrial Training, the most troubleshooting was testing the sensor. In the calibration service student figured out that the most problem face was the sensor problem. Usually, a problematic sensor will give no respond to any setting or gas purging. The sensor will be taken out and bring back to the lab for the testing.

In the lab, student will manage to do some wiring to connect all the unit such as the power supply, gas detector and control panel. This test gives some chance to the student to be exposed on simple wiring skills. Then the sensor will be tested and verify the problem then recommendation will be suggested to the client for the next action.

TOOLS AND EQUIPMENT

- Test Pen: To check the current flow in the wires inside the panel or gas detector

Figure 4.2: Test pen

- Cutter: To cut unused cable that causes the blockage for the flow of current

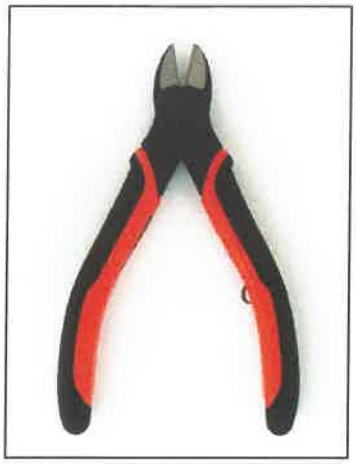

Figure 4.3: Cutter

- Screwdriver: A screwdriver is a tool that is used to drive screws. It can be manual or powered. A standard screwdriver consists of a handle and a shaft that ends in a tip that the user inserts into the screw head before rotating the handle. To resist bending or twisting, the shaft is usually composed of strong steel.

Figure 4.4: Screwdriver

- Wires: A wire is a single metal strand or rod that is usually cylindrical and flexible. Mechanical loads, electricity, and telecommunications signals are all carried by wires. Drawing metal through a hole in a die or draw plate is a common way to make wire. Wire is available in solid core, stranded, and braided varieties.

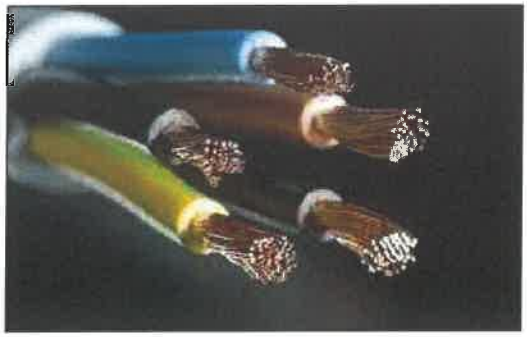

Figure 4.5: Wires

- Drill (cordless & non-cordless): Drill is a cylindrical end-cutting instrument for creating or enlarging circular holes in solid materials. A drilling machine usually rotates drills and feeds them into stationary work, however in other machines, a stationary drill may be fed into rotating work or the drill and work may rotate in opposite directions.

Figure 4.6: Drill

- Drill Bit: Drills are cutting instruments that are used to remove material in order to create holes, which are nearly invariably circular in shape. Drills exist in a variety of sizes and forms, and they can drill a variety of holes in a variety of materials. Drill bits are normally coupled to a drill, which enables them to cut through the workpiece, usually by rotating, in order to make holes.

Figure 4.7: Drill bit

- Spanner: a tool with a shaped opening or jaws for gripping and turning a nut or bolt.

Figure 4.8: Spanner

- Plier: Pliers are a hand-operated instrument that can be used to hold and grip small objects, as well as bend and cut wire. Slip-joint pliers have grooved jaws, and one member's pivot hole is enlarged so that the member can pivot in one of two positions for the most effective grasping of items of various sizes.

Figure 4.9: Plier

4.2.4 Prepare calibration data

During the calibration despite of making service and calibration report, student also will prepare the calibration data. The data in the calibration data form is referring the information service and calibration report. This form will specifically explain about the calibration done. This form consists of basic information of client such as date issue, the customer's name, location, manufacturer of gas detector, serial no of gas detector, model type, calibration time and the environmental condition (temperature and relative humidity).

Then the form will provide the detail of gas which is the type of gas and the certificate number. At the next will be the table of calibration test results that consist of the location of gas detector, sensor type, calibration gas (the desire reading), reading before calibration, reading at first calibration until sixth calibration then the average of the calibration reading.

Next will be the alarm setting, in the table it will explain the reading that will trigger alarm 1 and alarm 2, the function of alarm and the malfunction. Then the comments and the signature of person in charge in calibration service and the date.

Besides, student also need to fill the site checklist. The site checklist will include the equipment used in the site. It is the checklist before and after the checklist. Then the calibration data form, service and calibration report copy, and checklist will be compiled together and locate in the file for department documentation.

Procedure doing calibration data

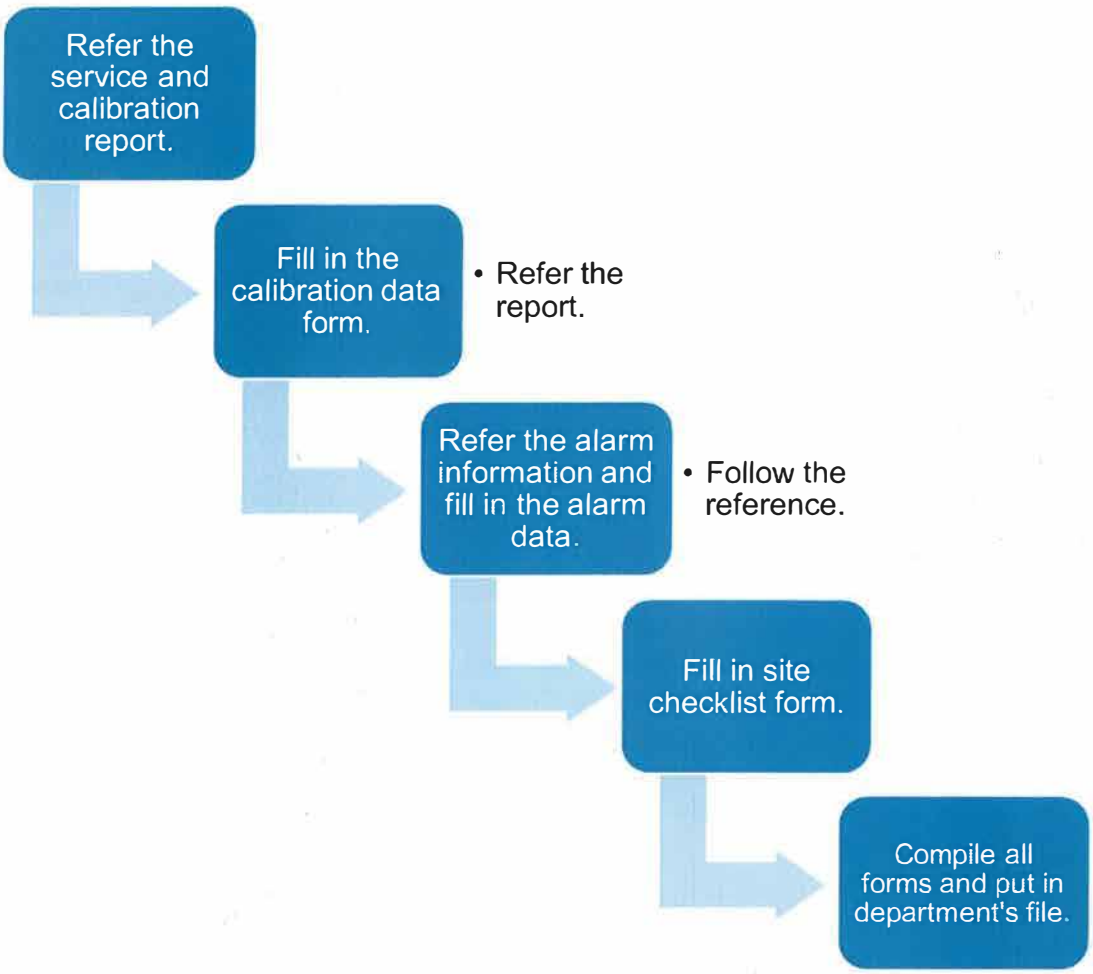

Figure 4.10: Calibration Data

4.2.5 Prepare certificate

Certification usually the final procedure of each calibration service. The goal of certification is to show that certain requirements have been satisfied. International standards are typically the foundation of the requirements. One Gasmaster Sdn Bhd have the template of the certificate. Student just need to fill the data about the company that have been serviced.

In the certificate have a few information for the company. Every certification has certificate no and it is different in every certificate. Then in the certificate have the customer's name, specific location of the gas detector at the company, the type of gas detector used in the company and product condition. The condition will be explained on the gas detector before the calibration and after the calibration. Next, the certificate also states the calibration date, date of next calibration and certificate issue date. The environmental condition such as temperature and humidity of the location also included.

Moreover, the calibration result done will be showed in box that included the location, standard calibration gas and measured standard concentration (before and after calibration). The measurement standard used will stated below the result box that included the reference of gas, concentration, certificate number and traceability. Then at the bottom will be the signature of authorized person in charge of the calibration and SAMM approved signatory.

4.3 Problem encountered and approach adopted for solving problem

4.3.1 Time Management

Student was put the OGCL-Fixed System Department. In this department student most of the time will go visit any site for maintenance purpose. Student and one senior will go to site to do gas detector calibration. Student few other states such as Kuala Lumpur, Perak, Kedah, Johor, Penang and Negeri Sembilan. All the companies in such place have their own time management and student and the senior to follow the time managed by the client. Sometimes student need to wake up early in the morning or maybe night before the site visit went the accommodation near to the site to make sure came on time at the site visit. On the other situation student also need to attend safety induction before enter the site so need to come early on the site. The best solution solves this problem was by discussing with student's senior about the schedule early

before the site visit. Student also discussed with senior about the meet point before went to a site visit if the site visit is further from office. Time management is important in working life. Managing time properly will lead to a proper work procedure. Indeed, if it deals with client then it will give a good impression and expectation from then and will sustain our business relation. Besides with a good time management student will manage to finish task within the time frame and no task will be delayed. Therefore, time management is the first problem faced by student and it is crucial to come with a good approach when deal with it.

4.3.2 Communication

Communication also one of big problems faced by the student during the 24 weeks of Industrial Training. First day of working this company was really awkward and felt very new. Student managed to stay with manual book to study. When it comes to work communication is important to avoid misunderstanding and misinterpretations. Student have a lot of misunderstanding of the work procedure in this company and the senior, this happen as student need to deal with professional worker and engineer. The other problem that happen regarding communication also occur due to age barrier between student and senior. A lot of information delivered were pending to be analyse by student because of lack of experience. Besides lack of feedback and information hoarding also the other problems happen in term of communication. Regardless of keep those problems occur, student managed to come out with a few solutions such keep being proactive to communicate with staff even from other department and also keep asking and take note the information earned. Student also need to reduce assumptions and ensure every work done must have proper references and procedure with creative and innovative ways. Having effective workplace communication has several advantages. More precisely, it helps firms improve workplace alignment and become more agile. Additionally, it enhances some of the most crucial KPIs related to talent attraction, engagement, and retention.

4.3.3 Electrical knowledge

The background study of student is in Chemical Engineering. During the study there were minimum knowledge learnt by student about electrical knowledge. Information regarding electrical was really minimum and a lot of knowledge need to be learnt. Student work under fixed system team that specifically doing maintenance of gas detector in sites. Most of the work were deal with electrical field such as wiring, terminating and a few other electrical components. Students also using a few types of electrical equipment such test-pen, digital voltmeter, span, cutter and plier. Student having a lot of problem with especially when deal with wire as it is dealing with safety. Alternatively, student need to be willing learn a lot of something new regarding the work. Student learnt all the knowledge from senior and supervisor. Students also given with manual book to study before start working in site. Besides student did research to learnt any other simple knowledge that related to the work. In other words, it's crucial for employees to have the knowledge they need to perform their jobs well, and encouraging knowledge sharing across the workforce will guarantee that everyone has access to the data they require.

4.3.4 Technical term

There are a lot of technical terms used during the Industrial Training. Those work terms used in the company made the information received by student might be misunderstood. A lot of problem could happen if the technical term were not sufficiently understood by student. The problem might can caused injured to the student himself or might cause near miss happen in the site. The safety purpose during work is important to be concerned and alert. Besides sometimes the work will be delayed if any mistake done because of the misunderstanding of work term. Example of technical term used such Permit to work (PTW), Purchase order (PO), Delivery Oder (DO), Calibration (CAL), Zeroing, International Organization for Standardization (ISO) and more others. All of these mostly used in industries so it is a good knowledge to be prepared before enter the real working-life.

4.4 Professional and ethical issues

4.4.1 Transparency

Transparency is the process of being open, honest and straightforward about various company operations. In this company I learnt that One Gasmaster Sdn Bhd is one of transparent company. This company share all information regarding performance, revenue, processes, sourcing, pricing and business values. Employee engagement is improved by workplace transparency. A transparent workplace values each employee's effort, advancement, and success. As a result, there is an increase in the level of trust between management and staff, which makes everyone feel more seen and heard. During the industrial training student also learnt that the foundation of trust in business is the relationship between a company and its partners, customers, employees, and investors. Being honest and upfront with stakeholders when discussing business-related issues is what is meant by transparency. The trust from customers will give opportunity to sustain the business among a company with their customer. All of this is the in line with the vision of One Gasmaster Sdn Bhd which is “Customers’ first Choice”.

4.4.2 Accountability

Accountability is the obligation or willingness to accept responsibility for one’s actions. Students and teams become more trusted when student hold everyone accountable for carrying out their duties. It enables co-worker to depend on one another, whether that be to meet deadlines, complete tasks, or feel at ease enough to ask a co-worker or management for assistance. In the grand meeting of One Gasmaster Sdn Bhd, Mr Ivan Tan, CEO of One Gasmaster Sdn Bhd always remind his staffs to give their dream with reliable ways. Student learnt to be pleasant to customer and find middle path between capability of working and happiness of customer. All these will be earned if student apply the quality of accountability in working-life.

4.4.3 Respect

Stress, issues, and disputes at work are reduced in a respectful workplace. It aids in enhancing teamwork and communication. Respect has a role in fostering a positive culture, which raises employee satisfaction since people feel happy and motivated in such a workplace. Student learnt the environment of positive working is important to enhance the quality of input done. Respect is not by following everything without differentiating wrong action and not. As a good student still can defend self if something done wrongly. Student that proactively giving idea can not be label as disrespectful just because they are not permanent staff in company. Student learnt that in working life it is better to not taking any improvement negatively. Respect with client will give extra credit to the company as a professional company and give a good first impression from client that lead to continuous business engagement among client and company.

4.4.4 Obedience to the law

An employee is required to perform their duties with care and to follow any instructions provided by their employer. Obviously, the employee is not required to follow irrelevant or unlawful directions, but in all other regards, the employer is free to choose the nature and format of the task. Student learnt a lot of policies applied by One Gasmaster Sdn Bhd and One Gasmaster Sdn Bhd strictly follow the law. In one site visit student followed senior to do work in NIOSH and Agensi Nuklear Malaysia. Both agencies were type of agency that really strict in term of law and legislation indeed One Gasmaster Sdn Bhd got trust from both agencies that proved that One Gasmaster Sdn Bhd is good in following rule. One Gasmaster Sdn Bhd also got certified by International Organization for Standardization (ISO) in activities such as supply, installation, testing and commissioning of occupational safety and health and environmental monitoring instrumentation solutions. Besides, One Gasmaster Sdn Bhd also certified in the Laboratory Accreditation Scheme of Malaysia and competence to operate acoustic calibration, electrical calibration, calibration of fixed gas detection system, calibration of gas analyser system, calibration of portable gas detector in accordance with Malaysia standard. In quality policies of One Gasmaster Sdn Bhd has stated that this company provide the best

service to customer in compliance with related ISO/IEC with regard to international standards, requirement and authorities. Student learnt in term of working student cannot only thinking about own benefits without concerning the other consequences that could happen or even against the law.

4.5 Health, environmental and sustainable aspects

One Gasmaster Sdn Bhd is a committed company when it comes to health, environmental and sustainable aspects. All the aspects stated were followed according to International Organization for Standardization (ISO) and Malaysia standard. During the Industrial Training, student have attended a few safeties induction that exposed student from basic safety to specific safety according to the type of manufacturer visited. Student also learnt a few types of PPE used in the manufacturer visited.

One Gasmaster Sdn Bhd also committed with environmental aspects below is the environmental policy learnt by student during the Industrial Training.

Environmental Policy

One Gasmaster Sdn Bhd is committed to protecting the environment and natural resources. In all its operation and services, this company strives to minimize its negative environmental impacts. We are committed to:

- Comply with all applicable legal and other requirements in all the regions that we operate in which are related to its environmental aspects
- Reduce waste and minimize resource consumption by practising the reuse and recycle program as much as possible.
- Protect the environment, including prevention of pollution and no damage should be left at any site or premises we operated.
- Continuously educate and motivate employees to carry out task in an environmentally responsible manner.
- Maintain healthy working environment for all employees.
- Continual improvement of the environmental management system to enhance environmental performance.
- Communicate this Policy to all relevant parties including our stakeholders, suppliers, and customers to promote environmental awareness at all levels.

The product calibrated itself is one of the products that can help the sustainability of environment. Some of the gases that use in industry if got spread to the environment by any

leaking in manufacturer might cause a lot of problem. This why company such as One Gasmaster Sdn Bhd is important for the sustainability of environment. All of this follow the Environmental Quality Act. Student also learnt to use properly gases that dangerous such as ammonia. Student also learn to use all of the gases wisely to avoid any wasting action. By all of that during 24 weeks performed the procedure within the guide by the senior.

Student learnt that gender equality in term of giving idea and opinion is relevant to be apply in the workplace. In organization chart in One Gasmaster Sdn Bhd student learnt that few of high position held by women, even in one site that student went was escort by a woman. Base on all the information student a lot of point from Sustainable Development Goals in One Gasmaster Sdn Bhd.

CHAPTER 5

CONCLUSION

5.1 Conclusion.

As a result, industrial training is highly advantageous to all individuals involved in helping to advance the performance of the economy. Being a student allows one to gain industrial experience while also becoming exposed to the actual working atmosphere at the industrial training facility. They can take use of this chance to develop their creativity even more while using the ethical standards of their chosen industry as a platform for future professional endeavors. Students must therefore grow in order to contribute to the prestigious company or sector.

The business or company will be able to find, evaluate, and direct its prospective employees in the meanwhile. In some instances, students who successfully complete industrial training have assisted the organization in addressing a skilled labor shortage. On the other hand, during the industrial presentation faculty panel has access to a variety of information on current business and organizational trends in addition to mentoring, supervising, and evaluating students, which will help them in their roles as academic staff members.

Once the advantages and seemingly unlimited benefits that may be obtained by all parties through this industrial training are realized, the successful collaboration between the University and the industry must be carefully assessed. In order to achieve shared goals and objectives, students and faculty panel must play a key role in making industrial training the activity that everyone looks forward to the most. They serve as the connecting force between the university and the company.

Besides that, one can work as an intern at a business. It has taught students how to be on time, how to solve problems, how to engage socially with other employees, how to work as a team to complete the assigned tasks, and how to be well-prepared for any situation that may arise. Additionally, interns are given little supervision, so they must have good memory skills to recall the instructions and complete the work effectively and without causing any trouble. Students now have some means of becoming more accountable and disciplined thanks to this.

Furthermore, I've gained a lot of insight and new exposure from working with the Fixed System Team. Working with these excellent employees and being given the chance to learn and contribute to the team has been a wonderful joy. Interns now have a clearer idea of what they should study in the future to succeed in a real-world working environment.

Students must complete 24 weeks (6 months) of industrial training in order to graduate from University Teknologi MARA. Before entering the work society circle, the programme has always stopped providing benefits to students in terms of experience and knowledge.

5.2 Suggestions and Recommendations.

Within the duration of 24 weeks, students observed and recorded every important information to complete the task given in their industrial training at One Gasmaster Sdn Bhd. Throughout the observation within 24 weeks here is the section that contains some suggestions for industrial training that should be addressed, as well as a recommendation for industry and faculty.

1. A weekly meeting between the Head of Department and the technical workers that may have a huge beneficial to express ideas and concern.
2. Therefore, they can increase productivity whilst pleasing both sides.
3. A monthly short meeting between students and university supervisors to express their workplace environment and works given. May be beneficial to students that have a difficult time in their workplace and was given unnecessary work that is out of their course or any related field.
4. The Department should give the weekly schedule to the student as this will help them to be more prepare on the job scope that given to them. This also will help them to learn manage their time properly especially if the site to be visit were out of the state.
5. Faculty should proactively acknowledge students about the important of card such as CIDB, OGSP and NIOSH card for their access to site that need those cards for requirement. Faculty also can manage to bring students to attend seminar or training to get those cards before the industrial training session start.

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4. Retrieved from INTRODUCTION OF ONE GASMASTER SDN BHD COMPANY

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Appendix

PRODUCT FROM ONE GASMASTER SDN BHD

FIGURE 5.1: UNION INSTRUMENT BIOGAS ANALYZER, GERMANY

FIGURE 5.2: SIEMENS CONTINUOUS EMISSIONS MONITORING SYSTEM, GERMANY

FIGURE 5.3: CODEL CONTINUOUS EMISSIONS MONITORING SYSTEM, UK

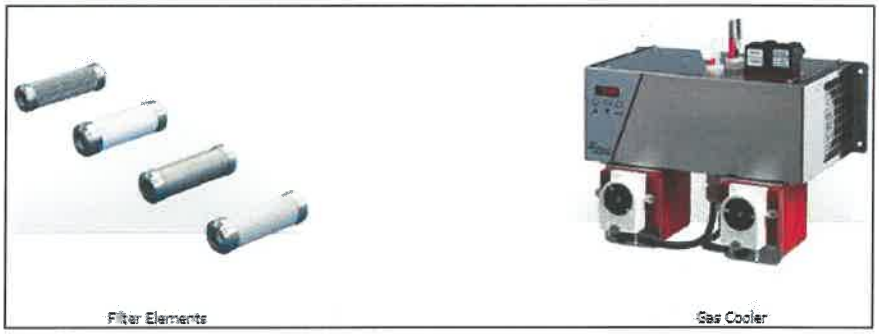


FIGURE 5.4: SAMPLE PUMP BUHLER, GERMANY

FIGURE 5.5: TEXAS SAMPLING INC, USA

FIGURE 5.6: DUAL EAR VALIDATION SYSTEM

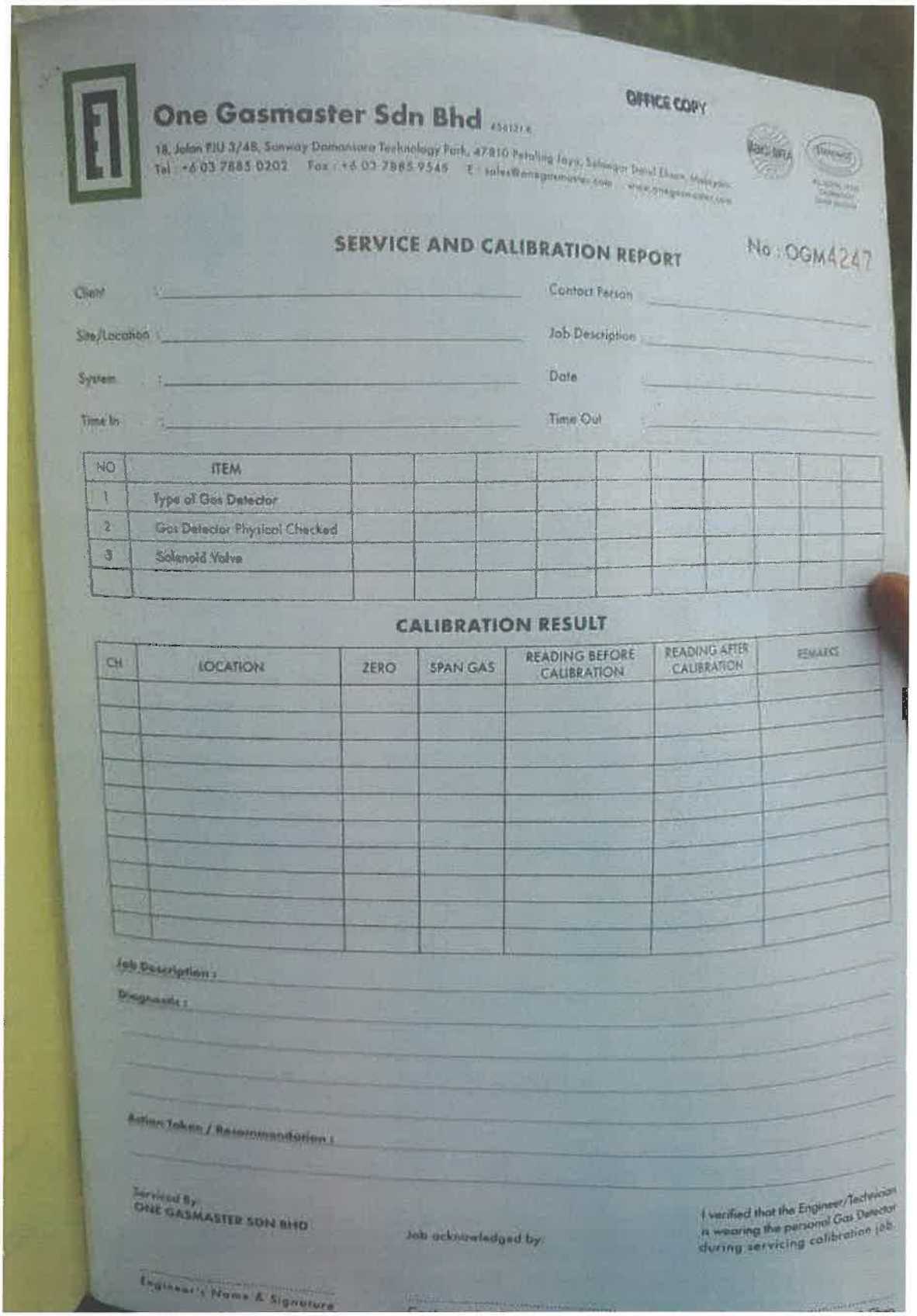
FIGURE 5.7: PERSONAL AIR SAMPLING PUMP INSTRUMENT

FIGURE 5.8: CROWCON DETECTION INSTRUMENT DEVICE

FIGURE 5.9: CROWCON DETECTION INSTRUMENT DEVICE

FIGURE 5.10: KANE ANALYZER DETECTION INSTRUMENT DEVICE

FIGURE 5.11: ION SCIENCE DETECTION INSTRUMENT DEVICE



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SERVICE AND CALIBRATION REPORT No : OGM4247

Client : Contact Person :

Site/Location : Job Description :

System : Date :

Time In : Time Out :

NO	ITEM										
1	Type of Gas Detector										
2	Gas Detector Physical Checked										
3	Solenoid Valve										

CALIBRATION RESULT

CH	LOCATION	ZERO	SPAN GAS	READING BEFORE CALIBRATION	READING AFTER CALIBRATION	REMARKS

Job Description :

Diagnosis :

Action Taken / Recommendation :

Serviced By
ONE GASMASTER SDN BHD

Job acknowledged by

I verified that the Engineer/Technician is wearing the personal Gas Detector during servicing calibration job.

Engineer's Name & Signature

FIGURE 5.12: SERVICE AND CALIBRATION REPORT

TROUBLESHOOTING

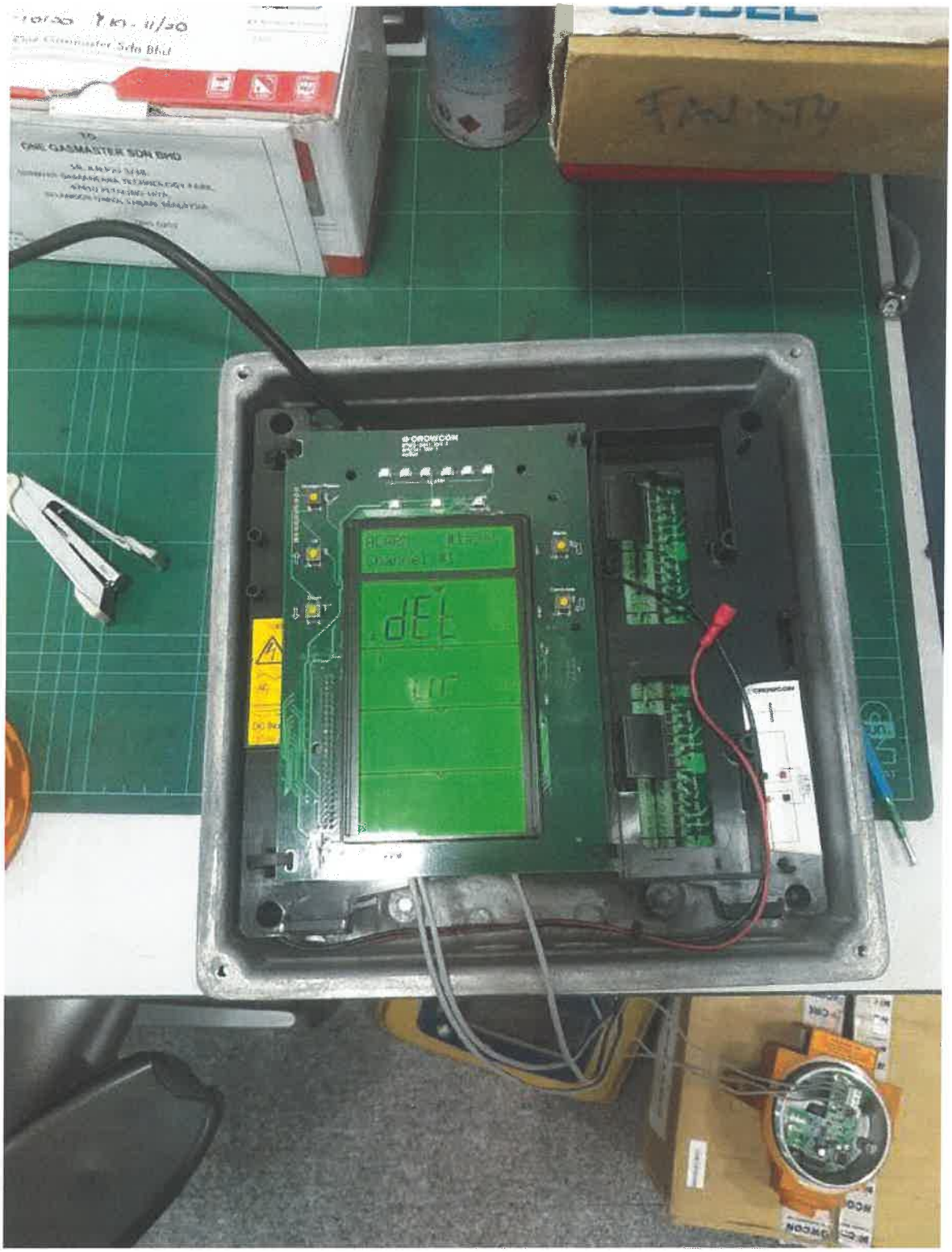

FIGURE 5.14: SENSOR TESTING

SITE VISITED

FIGURE 5.15: MANUFACTURER VISITED

FIGURE 5.16 LOCATION OF GAS DETECTOR

FIGURE 5.17: SUSTAINABLE DEVELOPEMENT GOALS

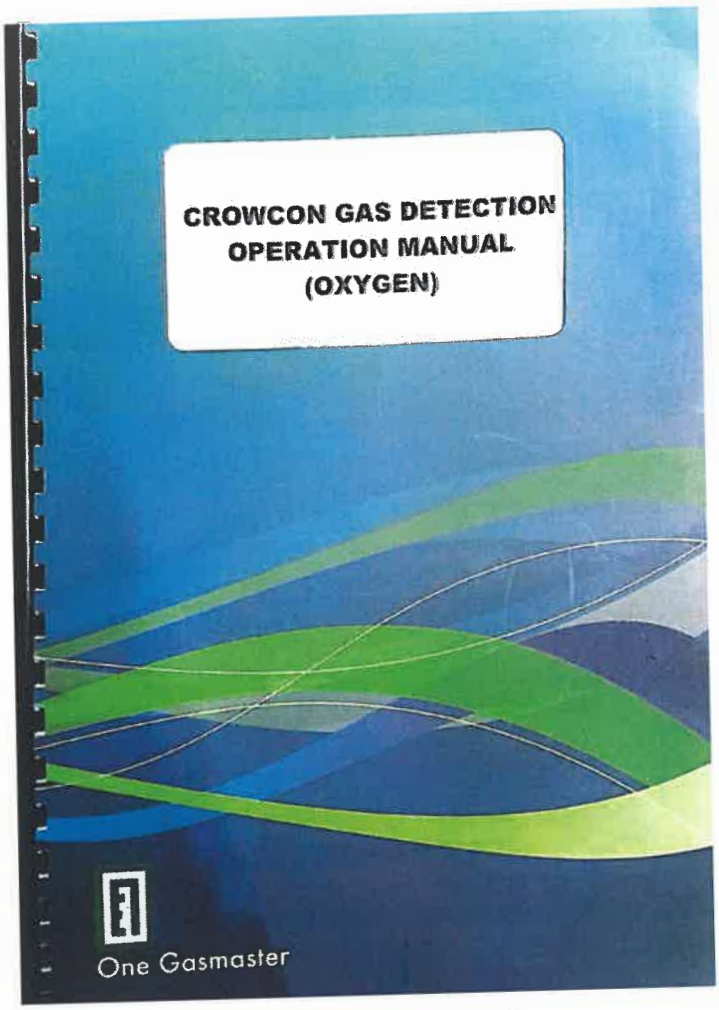

FIGURE 15.18: MANUAL REPORT