GUIDANCE DOCUMENT ON FIELD TRAINING REPORT PREPARATION FOR CERTIFIED ENVIRONMENTAL PROFESSIONAL IN THE OPERATION OF INDUSTRIAL EFFLUENT TREATMENT SYSTEMS BIOLOGICAL PROCESSES/PHYSICAL CHEMICAL PROCESSES (CePIETSO BP/PCP)

1. INTRODUCTION

Preparation of Field Training Report (FTR) is the last step that candidates need to complete the certification process. The FTR provided will show that the candidate is willing to carry out his responsibilities as a competent person as required under Section 49A, Environmental Quality Act 1974.

In general, the FTR report prepared by the candidate should have been able to explain the candidate's involvement in the following processes/activities task:

- Carry out performance monitoring data measurement for industrial effluent treatment system using equipment and instrumentation that has been provided for industrial effluent control system operating on-premises.
- Prepare performance monitoring analysis reports and present them to the performance monitoring committee established on the premises.
- Implement schedule maintenance activities and take corrective action on the operation of industrial effluent treatment system
- Initiate efforts to introduce/improve work procedures and performance monitoring for industrial effluent treatment systems that have been operating on the premises.

The successful preparation of the FTR demonstrates the fruitful collaborative efforts between the candidate and the management in his organization in implementing the environmental mainstream at the work premises.

Therefore, the FTR report provided must show that the management of the industry/organization/company has accepted the Guided Self-Regulation (GSR) approach in conducting its business by implementing environmental mainstreaming tools (EMTs) in the premises/company/industry organization.

The evaluation of the FTR report prepared by the candidate will look at the candidate's contribution to the overall improvement efforts that have been made in the operation of industrial effluent treatment system and performance monitoring activities in accordance with relevant laws and guidelines in ensuring the success and compliance of the premises in industrial effluent control operations.

2. GENERAL SPECIFICATION AND FORMAT

The field training report should follow the general specification and format as below:

2.1 Specification

Covers and Binding
The report should be bound preferably in hard cover (**BLUE Color** with **GOLD LETTERING**)

- Typeface to be used is Arial
- Front Cover of the report is attached for reference.

Language of Report
Report may be written in English or Bahasa Malaysia

Typeface and Font Size of the Main Text
Typeface to be used is Arial. Font size of 12 point should be used for the main body of the text.

Margins and Spacing
The margin on the document must comply with the specifications below:
Top – 20 mm
Bottom – 40 mm
Left – 40 mm
Right – 25 mm

Text
Text should be: **typed one side** of the paper only**, one and a half-spaced, left-right justified**. For captions of figures and tables, single spaces can be used.

Pagination
Every page except the title page must be **numbered**; **PRELIMINARY PAGES** are to be numbered in **lower case Roman numerals** (i, ii, iii etc.); and **MAIN TEXT** pages are to be numbered at the center of the page (1, 2, 3...) and all pages must be numbered **consecutively** and **continuously.**

2.2 Format
The structure of the report is based on standard format which contains the following sections:

A. Preliminary Pages
B. Main Text
C. Appendices

The report should contain a minimum of 15 pages (excluding executive summary, illustrations, photographs, appendices, or figures).

Photographs should be printed in **COLOR.**

3.0 FIELD TRAINING PERIOD

The candidates are required to undergo field training on operating and maintaining a bag filter system at their work place for a **minimum of six (6) months**.

4.0 SUBMISSION OF FIELD TRAINING REPORT

The FTR report shall be submitted to EiMAS **within one (1) year from the date** the Temporary Competent Certificate is issued

The FTR report must be submitted to EiMAS at the following address:

The Director
Environment Institute of Malaysia (EiMAS)
Department of Environment
Universiti Kebangsaan Malaysia
43600 BANGI, SELANGOR
(Attn: Industry Certification and Competency Centre)

Report must be submitted in **in one (1) hardcopy report and one (1) in softcopy report (CD or USB drive)**

If you have any technical questions regarding the field training report preparation, please email your questions to pkpi@doe.gov.my

The structure of the report is based on standard format which contains the following sections:

A. PRELIMINARY PAGES

(The preliminary pages shall include at least the following)

a) GENERAL INFORMATION ON THE CANDIDATE

1. Name of trainee:

   ……

2(i). Contact Address:……

   ……

2(ii) Email: ……

2(iii) Handphone No: ……

3. Designation:

   ……

4. Nature of Business:
   Indicate the type of your organization, whether a consulting company or a manufacturing industry. If your company is a manufacturing industry, you should provide the following information:

   Type of manufacturing:

   ……

   Others please specify:

   ……

5. Date of attending the course on Certified Environmental Professional in The Operation of Industrial Effluent Treatment Systems Biological Processes/Physical Chemical Processes conducted by the Environment Institute of Malaysia (EiMAS):

   ……

6. Name and address of the premise where you underwent the field training.

   i) Name:……

   ii) Address:……

7. Period of Field Training:

   ……

8. Contact officer in the above organization who could verify your training experience:

   Name: ……
   Designation: ……
   Phone number: ……
   Fax number: ……
   E-mail address: ……

b. List of Duties:

9. i)……
   ii)……
   iii)……

c. Continuing Professional Development (CPD)

10. List of seminars, workshops, training courses, etc attended in the past 3 year, if any;

    ……
    ……
    ……
    ……

Verification and Declaration must be type written using the OFFICIAL LETTERHEAD of the company the candidate is attached to.

d. Verification (to be filled out by the candidate's supervisor)

"I hereby declare that (Mr/Ms)……has completed the six months field training as required and the information provided in the report is true to my best knowledge"

Name of Supervisor:…… NRIC number: ……

Designation :……..

Signature: …… Date: ……

Company's stamp:

e. Declaration (to be filled out by the trainee)

"I declare that the entire report is the product of my own work and all the facts stated in it and the accompanying information is true and correct and that I have not withheld or distorted any material facts"

Name of Candidate:…… NRIC number: ……

Designation :……..

Signature: …… Date: ……

Company's stamp:

B. MAIN TEXT

The main text or body of the FTR shall include at least the following chapters.

CHAPTER 1: INTRODUCTION

1.1 Background of Organization/company

In this subchapter, you should describe the background of the company (name of the company/premises, location of the premises, establishment information, operating hours of the premises, employee strength, manufacturing carried out, etc.)

Describe the type of manufacturing carried out in your factory and the products produced/carried out in this premises.

Brief the whole process/activity - attach process flow chart - raw material - product produced - waste generated - which process/activity generates pollution

1.2 Organization's/company's environmental commitment

This subchapter summarizes the implementation of environmental mainstreaming (EM) tools of the Guided Self-Regulation (GSR) approach. You are required to update and follow up with related management personnel to update the information of EMT in Environmental Mainstreaming Tools (EMAINS) at http://emains.doe.gov.my.

The reporting of the EMT is explained below.

1.2.1 Environmental policy (EP)

In this subchapter, at the minimum you should reproduce an extract of your company's/industry's Environmental Policy. Mention the date the policy was made and identify whether the policy is an existing policy or a new policy which has been developed. If it is a new policy, explain how and where you were involved in its development.

Attach a copy of the official EP with the CEO's/president's/manager's signature or retype it and have it formally endorsed

Note:
The environmental policy (EP) of successful organizations uses strong and unequivocal statements to convey their environmental commitment to their employees, clients, stakeholders and the public. The EP is disseminated to all relevant parties and translated into action in the organization's work procedures, materials purchasing policy, business decision making process and cascades down to the supply chain.

1.2.2 Environmental facilities (EFs)

In this subchapter you are required to describe the Environmental Facilities (EFs) provided, installed, and maintained at your industrial premise/company/organization. Although the focus of the FTR is on the IETS, you may also include in your discussion, air pollution control systems (APCS), noise abatement system, performance monitoring equipment, on-line instrumentation system, and associated support facilities such as IETS laboratory facilities.

1.2.3 Environmental budgeting (EB)

In this subchapter, briefly describe budget allocated for proper operation and maintenance of pollution control systems. EB includes setting up facilities, provision of personnel and purchase of performance monitoring equipment and etc

List the environmental budget for operation and maintenance of pollution control system that have been approved and signed by the management

Note:
Sufficient budget must be set aside solely for the purpose of taking measures to comply with the environmental regulatory requirements and other environmental-related efforts. At the design stage, budget must be available for the design and installation of the pollution control facilities, while at the operational stage, budget must be allocated for proper operation and maintenance of pollution control systems and management of waste generated by the industry. The environmental budget also includes the cost for setting up of laboratory facilities, provision of personnel, and purchase of performance monitoring equipment.

1.2.4 Environmental competency (EC)

1.2.4.1 Training of environmental personnel

In this subchapter you are required to provide an organizational structure (up to unit manager/departmental manager or similar designation) and identify on it all the relevant staff (including yourself as the CePIETSO candidate) who are involved directly or indirectly with the operation, maintenance, and monitoring of the IETS. Training plan to improve environmental competency of the relevant staff must be discussed.

- Attach overall organization chart. Label your position as Competent Person (CP) in the organization chart; and

- List IETS personnel/staff involved directly or indirectly to IETS operation and identify their relevant training plan. Table as below

Staff name	Main IETS responsibilities	Relevant course	Planned course date

(note: courses can be held in-house or staff can be sent to attend external courses)

1.2.4.2 Functions of CePIETSO

In this subchapter you are required to discuss and provide a certified copy of your list of duties (e.g. job description-JD) where it shows the IETS performance monitoring functions or other functions related to IETS operation and supervision are one of your core duties. The JD can be placed in this subchapter or may also be placed in the Appendix, if it occupies several pages.

Note on Environmental Competency:
The relevant personnel involved in discharging various environmental responsibilities within an organization need to possess the required competencies. The personnel include those who have been assigned the task to perform DOE-regulated functions: to conduct performance monitoring of air pollution control system. The organizations must draw up a comprehensive training program to produce competent persons and trained support staff to ensure full compliance with the DOE requirements in the regulated activities.

1.2.5 Environmental monitoring committees (EMC)

1.2.5.1 Environmental performance monitoring committee (EPMC)

In this subchapter you are required to provide an organizational structure of the environmental performance monitoring committee (EPMC) and its terms of reference (TOR) or functions. The EPMC, which is at the working level must meet at a minimum once in a quarter. Provide the date when the EPMC was established, designations/posts of its committee members and its meeting dates within the FTR preparation period. The EPMC members must be officially appointed by the chief operating officer (CEO) or president of your industry/organization/company or official of similar rank. A certified copy the minutes of one of the EPMC meetings must be provided in the Appendix as evidence.

Attach

- Committee structure - Environmental Performance Monitoring Committee (EPMC) - chaired by a senior official of your company's/industry's organization
- List term of reference (TOR) or function of EPMC
- List all date of EPMC meeting and EPMC members present within the FTR period

1.2.5.2 Environmental regulatory compliance monitoring committee (ERCMC)

In this subchapter you are required to provide information/organization chart of the policy level committee which must meet at a minimum once a year. The information includes the post/designation of the chairperson of the ERCMC and the posts of the committee members.

Attach

- Committee structure - Environmental Regulatory Compliance Monitoring Committee (ERCMC), which chaired by chief executive officer or chairman of the company's/industry's organization – which would monitor on overall environmental compliance.

Note:
The success of an organization to comply with the environmental requirements is contingent upon the relevant personnel in different departments in the organization playing their role in an effective manner. To promote collective responsibility to be environmentally compliant, two monitoring committees are set up: one at the working level, the other at the policy level. At the working level, the committee known as the environmental performance monitoring committee (EPMC) is chaired by a senior official of the organization and it meets on a monthly basis. At the policy level, the committee is known as the environmental regulatory compliance monitoring committee (ERCMC), which meets once a year. The chief executive officer or chairman of the organization chairs the ERCMC.

1.2.6 Environmental reporting and communication (ERC)

In this subchapter you are required to describe the communication channel established for reporting IETS issues (and other environmental concerns) which require prompt actions to be taken.

Briefly describe and show,

- how IETS performance monitoring report or any IETS issue or environmental concern are report to Environmental Performance Monitoring Committee (EPMC) and

- how environmental compliance report is made to Environmental Regulatory Compliance Monitoring Committee (ERCMC).

- describe on management response when report is made.

Provide sample of reporting to EPMC & ERCMC. Example of performance monitoring reports prepared by you as competent person must be attached in this report

Note:
A formal communication channel must be established for reporting environmental concerns and system upsets which warrant prompt actions to be instituted. Internal reporting can be initiated to report on a regular basis the regulatory compliance status of the organization to the chief executive officer (CEO) and various heads of the department within the organization. Updates of new environmental requirements and their implications can be disseminated to the relevant company personnel. ERC requires systematic data, which must be summarized in appropriate format for easy understanding and communication and maintained for management review purposes.

1.2.7 Environmental transparency (ET)

Briefly describe how your industry's/company's transparent in their environmental compliance and achievement.

Provide information such as photos of billboard/website, copy of flyers/brochure, noticeboard - showing the environmental compliance to public.

Provide related environment corporate social responsibility (CSR) involving with community.

Note:
To foster rapport with the immediate neighbours, promote green image, and improve public confidence, companies are encouraged to be more transparent in their environmental compliance and achievement. Compliance status can be displayed on company website or billboard located at the boundary or entrance to the company's premise. An environmental sustainability report can be prepared for the company to showcase its success in managing the environmental concerns of the company and minimizing the environmental footprint of its business. The corporate image of the organization is markedly enhanced through environmental transparency.

CHAPTER 2: PERFORMANCE MONITORING OF INDUSTRIAL EFFLUENT TREATMENT SYSTEM

2.1 Manufacturing activities and effluent generation

In this subchapter, with the help of a “manufacturing process flowchart”, you are required to briefly explain the manufacturing processes carried out in your industry/organization/company and identify on it the effluent generation points, and the quality and quantity of effluent generated.

Provide a table of the chemicals used in the manufacturing process (example given below Table 2.1a) and a table which summarizes the characteristics of the raw effluent (quality and quantity) (example given below Table 2.1b) covering the FTR preparation period. Briefly discuss the biodegradability of your effluent and nutrient requirements (or nutrient deficiency) for organic effluent and determine the significant effluent parameters.

Table 2.1(a): Chemicals used in manufacturing process

Name of chemical	CAS #	Average monthly quantity used	Remarks

Note:

- CAS: chemical abstract service, if applicable;
- Provide information only on the main chemicals used that have an effect on the quality of the effluent generated.

Table 2.1 (b): Raw effluent characteristics

Parameter	Range	Average	Remarks
Q, m^3/d			
pH, value			
BOD, mg/L			
COD, mg/L			
SS, mg/L			
Others…			

2.2 Description of IETS

In this subchapter you are required to describe and discuss the components of the IETS (unit processes and unit operations) installed in your premise to treat the effluent you described in 2.1.

It is recommended that you present a block diagram and pictures of the IETS components. Additionally, a table (example given below Table 2.2) should be used to present information on the relevant design details, hydraulic retention time (HRT), the control range, and other relevant details of the IETS components.

Table 2.2: IETS design and operating details

Component	Function	Design details	Control range	Remarks
EQ		HRT:		
pH adjustment tank		HRT:		
Metal precipitation tank		HRT:		
Coagulation tank		HRT:		
Flocculation tank				
Chemical solids clarifier		HRT: SOR: WOR:		
Activated sludge		Sludge age:		
Biological solids clarifier (secondary clarifier)		SOR: WOR:		
Others…				

2.3 Conduct of IETS performance monitoring

2.3.1 Situation before course attendance

In this subchapter, you are required to describe how the IETS performance and environmental regulatory compliance issues were being monitored before you attended the CePIETSO course.

2.3.2 Changes instituted

In this subchapter, you are required to describe how and what changes were made through your efforts or intervention to the way IETS is operated and monitored in your premise, to be in line with the procedure taught in the CePIETSO course. The changes cover both the “software aspects” and “hardware aspects” which may include the following:

- New or revised PM field checklists/log sheets (additional parameters, revised sampling frequency)
- New or revised internal reporting format
- New communication/reporting channel for IETS emergency situations (equipment breakdown, upsets, etc.)
- IETS hardware improvements (small modifications or upgrading)
- Purchase of PM instruments
- New or revised procedure for PM data analysis
- Use of performance monitoring reports (PMR)

Any of the above items when mentioned and discussed in the FTR must be provided with evidence placed in the Appendices. For example, provide a photocopy of the handwritten PM field log sheets containing two signatures used by your IETS technicians.

CHAPTER 3: DISCUSSION OF PERFORMANCE MONITORING ACTIVITIES AND RESULTS

In this chapter you must provide a thorough discussion of the performance monitoring activities and data obtained within the FTR preparation period. From the information on the unit processes and unit operations of your IETS as described in 2.2. the relevant performance monitoring parameters must be identified. You must then compare the PM data obtained with the recommended ranges. Based on the comparison you must make a brief statement whether the processes that were supposed to occur in the treatment components actually occurred in an optimal fashion. Any abnormality observed or data falling out of the recommended ranges must be explained. The discussion in this chapter is made primarily through the use of graphical plots of all the PM parameters.

As a guide, the table below gives a **summary of typical IETS(PCP)** components and graphs of PM parameters commonly associated with the monitoring of the PCP components.

Component	**Graphs "X vs Y" to be plotted**	**Other relevant activities**	**Control range, if applicable**
Equalization	Q, pH, BOD, COD, metals		
Cooling	T		
pH adjustment	pH	Maintenance of acid/alkali dosing system	
Coagulation and flocculation	pH	Conducting Jar test; dosing calculations, maintenance of coagulant dosing system	
Chemical precipitation (hydroxide, sulfide, carbonate, sulfate, etc.)	pH	Maintenance of chemical dosing system	

Component	**Graphs "X vs Y" to be plotted**	**Other relevant activities**	**Control range, if applicable**
Dissolved air flotation	A/S ratio; pH, P	Observation of skimmer speed; coagulation/flocculation aspects if carried out.	
Ion exchange	Metals, pH	Breakthrough time monitoring; Maintenance of chemical dosing system; regenerant management	
Adsorption	COD, P	Pressure; Breakthrough monitoring	
Chemical oxidation	ORP, pH	Maintenance of chemical dosing systems	
Redox	ORP, pH	Maintenance of chemical dosing systems	
Electrocoagulation	Voltage, COD		
Fenton's process	pH, COD		
Membrane filtration	TMP, pH, SS, turbidity		
Media filtration	P, SS, turbidity		
Evaporation	T, P		

Note: List not exhaustive; T = temperature; TMP = trans membrane pressure; Graphs to be plotted depend on a case to case basis.

Summary of typical IETS(BP) components and graphs of PM parameters commonly associated with the monitoring of the BP components is given in the table below.

Component	**Graphs to be plotted**	**Other relevant activities**	**Control range, if applicable**
Equalization	Q, pH, BOD, COD, SS		
Primary clarifier	SS, turbidity	Calculation of SOR, SLR, WOR	
Ponding system	pH, DO (for aerobic system), SS, ORP,	Calculation of OLR, HRT	
Anaerobic system UASB	COD, T, pH, ORP, VFA, Alk,	Nutrients analysis; gas analysis	
AD	COD, T, pH, ORP, VFA, VFA/Alk,	Nutrients analysis; gas analysis	
Activated sludge	pH, DO, ORP, MLSS, MLVSS, SVI, OUR	Nutrients analysis; calculation of sludge age, F/M ratio and SOUR	
MBR	pH, DO, ORP, MLSS, MLVSS, SVI, OUR, scouring air flowrate	Nutrients analysis, calculation of sludge age, age, F/M ratio and SOUR; membrane chemical cleaning	
Trickling filter	pH, DO, SS	Nutrients analysis, filter observations	
RBC	pH, DO, SS	Nutrients analysis, media observations	

Note: List not exhaustive; Graphs to be plotted depend on a case to case basis.

For activated sludge systems, you need to clearly identify the method of process control adopted at your plant (constant MLSS, constant F/M ratio, constant sludge age or constant SVI) and explain how the control is done on a daily basis.

It is recommended that you use several subparagraphs to present your discussion of the PM procedure implemented at your premise, graphical plots and PM activities data.

3.1. PM procedure, sampling stations and frequency

You must explain the PM procedure implemented at your presmise and present a table of sampling stations, parameters/equipment readings and sampling frequency. (Example is shown below Table 3.1).

Table 3.1: Performance monitoring: sampling stations, parameters and frequency

Sampling station	**Sampling parameters**	**Sampling frequency**	**Control range**	**Remarks**
EQ outlet	Q, BOD, COD, pH, SS, ……	Daily (Q, pH,……); Weekly (….,….,….)		
pH adjustment tank outlet	pH	Daily		
Activated sludge Aeration tank	pH, DO, MLSS, MLVSS, F/M, OUR, SOUR, SVI	Daily (pH, DO,…); Weekly (F/M,….)		
Others..				

3.1.1 Determination of control ranges

In this subchapter you are required to explain how the control ranges stated in Table 3.1 above are obtained. For example, pH in the metal hydroxide precipitation tank was obtained from the results of metal solubility test, or flowrate (Q), BOD, and COD used as the control were obtained from the maximum flowrate used by the consultant in the design, or F/M and sludge age ranges were obtained from the Guidance Document, etc.

3.2 Discussion of PM data

(NOTE: At a minimum six months data are required for graph plotting and reporting PM activities)

3.2.1 Monitoring of EQ

In this subparagraph you must **present and discuss graphical plots** of the monitored parameters (e.g. pH, BOD, etc.) versus time.

Fig 3.xx: pH versus day (Jan 1 to Jan 30, 2017) of EQ effluent

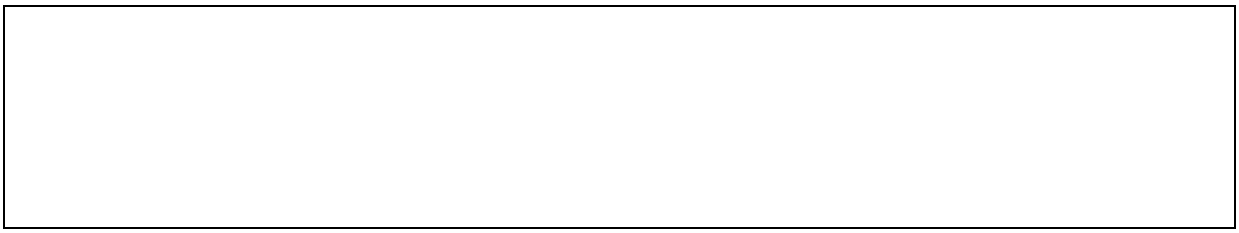

Fig 3.xx: COD concentration versus day (Jan 1 to Jan 30 2017) of EQ effluent

Fig 3.xx: Others……

3.2.2 Monitoring of pH adjustment in pH adjustment tank

In this subparagraph you must **present and discuss graphical plots** of pH versus time.

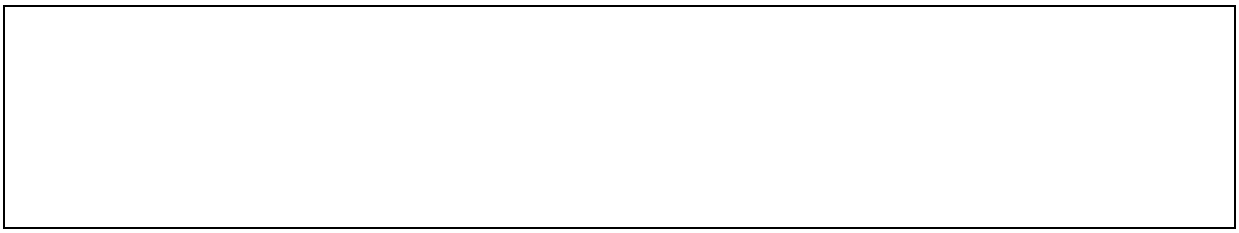

Fig 3.xx : pH versus day (Jan 1 to Jan 30 2017) in pH adjustment tank

3.2.3 Monitoring of activated sludge system

3.2.3.1 Activated sludge system process control

In this subparagraph you must discuss the method of process control adopted for your AS system. The method may either be the constant sludge age method, the constant MLS method, or the constant F/M ratio method. Explain how the control is done on a daily basis.

3.2.3.2 Discussion of performance monitoring data

In this subparagraph you must present graphical plots of the monitored parameters (e.g. DO, MLSS, MLVSS, F/M ratio, OUR, SOUR, SVI, etc.) versus time and discuss them by comparing the values obtained with the control/recommended ranges. Any data falling out f the recommended ranges needs to be explained.

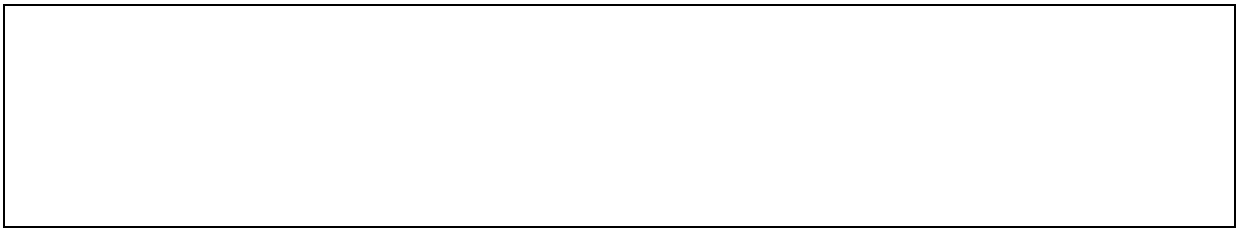

Fig 3.xx DO versus day in aeration tank ((Jan 1 to Jan 30, 2017)

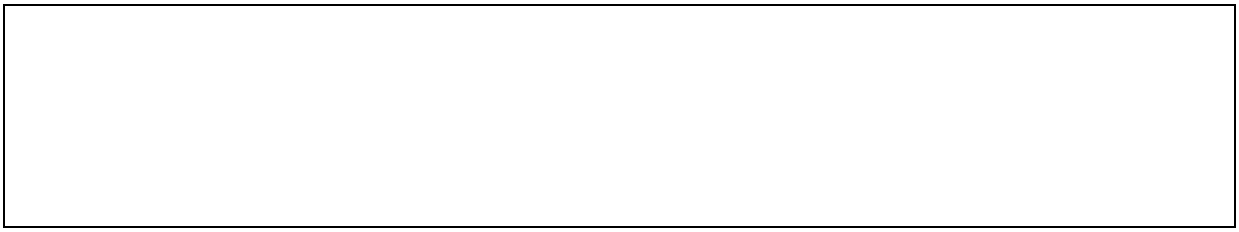

Fig 3.xx MLSS versus day in aeration tank ((Jan 1 to Jan 30, 2017)

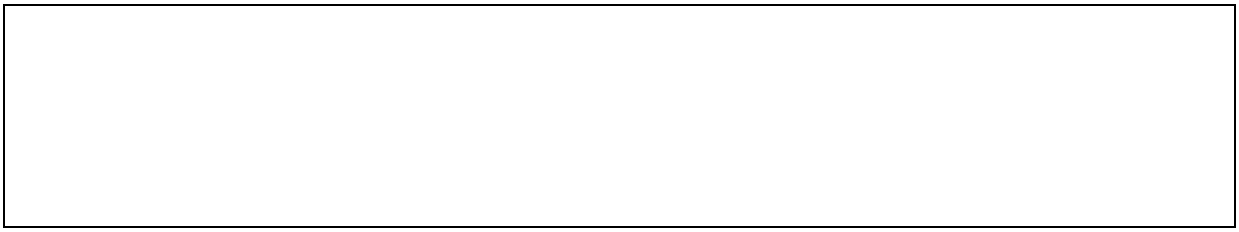

Fig 3.xx F/M ratio versus day ((Jan 1 to Jan 30 2017)

Fig 3..xx Others…

3.2.4. Monitoring of adsorption process in activated carbon column

In this subparagraph you must present and discuss graphical plots of the monitored parameters (e.g. COD, etc.) versus time. You must also identify clearly the method used for monitoring the column breakthrough time.

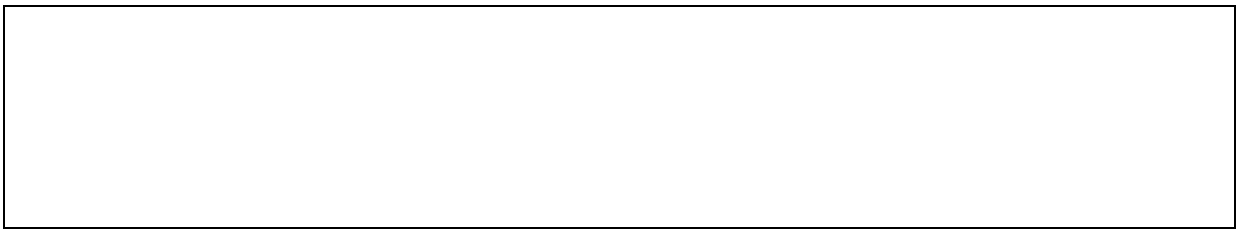

Fig 3.x COD concentration versus day (Jan 1 to Jan 30 2017) of EQ effluent

3.2xx Monitoring of……etc.

Note: Continue the discussion on all the monitored parameters using the graphical plots

3.3 Other PM activities

3.3.1 Jar testing

3.3.2 Instrument calibration

3.3.3 Equipment and instrument maintenance

Any of the above items when mentioned and discussed in the FTR must be provided with evidence, placed in the Appendices. For example jar test results can be presented in the form of graphical plots and coagulant dosage calculations. The evidence for instrument calibration and maintenance activities would be the photocopies of calibration records and maintenance schedules.

3.4 Compliance monitoring

In this subchapter you must present and discuss graphical plots of the significant parameters (plus the discharge standards as the control limits) monitored at the final discharge point or points. Make a conclusion on the status of compliance based on the graphs presented. It is recommended that you present your discussion in subparagraphs as follows (depending on the parameters):

3.4.1 pH at FDP

Fig 3… pH at the FDP versus day (January 1-30, 201..)

3.4.2 COD at FDP

Fig 3… COD at the FDP versus day (January 1-30, 201..)

3.4.3 SS at FDP

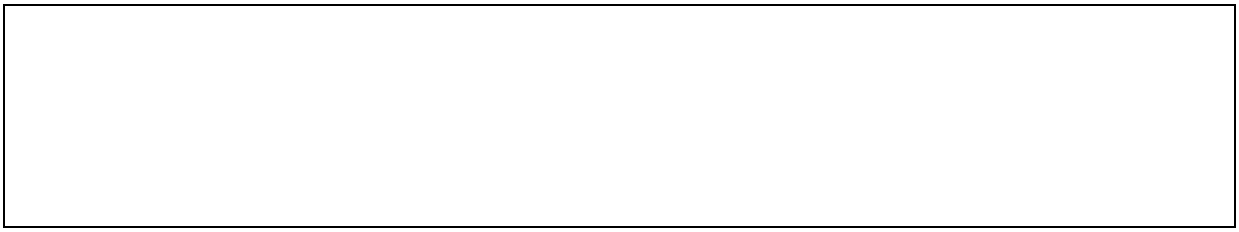

Fig 3… SS at the FDP versus day (January 1-30, 201..)

3.4.4 etc…

CHAPTER 4: UPSET CONDITIONS AND CORRECTIVE ACTIONS

In this chapter you are required to describe the details of upset conditions encountered, if any, during the operation of IETS for the duration of the FTR preparation. You must provide information on the nature of upset conditions, when they happened, why they happened, who discovered them, what corrective actions were taken, and how long it took to fix the problems. The upset conditions may be “minor” which may last only for a short duration and simple corrective action may promptly fix the problem. The minor upset should not result in a discharge noncompliance. On the other hand, an upset condition may be classified as “major” which may last for several hours or longer and results in serious implications such as discharge noncompliance or factory shutdown. In such a situation substantial corrective actions may be necessary to restore conditions to normalcy. Both for the minor and major upsets, you must also discuss what preventive measures (hardware, procedure, etc.) have been put in place by you and the management of your industry/organization/company to prevent the problems from recurring.

You may want to present your discussion in subparagraphs as follow:

4.1 Minor upsets

4.2 Major upsets

4.3 Preventive measures

Evidence in the form of photographs, internal memos, purchase requests, bills paid for corrective actions and preventive measures, etc. must be provided for the items mentioned or discussed in this chapter.

CHAPTER 5: FURTHER IMPROVEMENTS

In this chapter, you are required to describe what future efforts, beyond the FTR preparation period, if any, have been initiated by you to further improve environmental regulatory compliance and ensure smooth running of the IETS on a sustained basis. The proposed initiatives/projects must have been discussed at the EPMC meetings and some form of endorsement or commitment has been obtained from the management. The improvement initiatives may be “hardware” in nature or “software or nonhardware” in character. Evidence in the form of EPMC meeting minutes, equipment purchase requisition, or implementation schedule must be provided in the Appendix. Potential areas for improvement may include IETS upgrading, environmental staffing and training, IETS data management, communication, reporting, etc. Present your discussion in subparagraphs wherever appropriate, such as:

5.1 Hardware improvements
5.2 “Nonhardware” improvements

CHAPTER 6: CONCLUSIONS

In this chapter, you are required to make some conclusions on the overall performance of your IETS and to discuss how performance monitoring and the CePIETSO certification program have benefited you and your industry/organization/ company. The aspects to discuss should cover such areas as knowledge and skill, image, PM data management, IETS maintenance, regulatory compliance, etc.

C. APPENDICES

Appendices serve as evidence of the items or subjects or improvements mentioned in the main text.
Among others, the appendices may include the following:

Appendix I
List and photographs of performance monitoring equipment/instruments (Model number, Manufacturer) used for conducting performance monitoring activities

Appendix II
An example of Minutes of the EPMC meetings

Appendix III
An example of the IETS Performance Monitoring Report submitted to the EPMC or management at the headquarters

Appendix IV
Field log sheet for monitoring (with operator and supervisor signatures)

Appendix V
Jar test results and coagulant dose calculations

Appendix VI
Further improvements: (hardware and nonhardware)
- Implementation schedule
- Equipment purchase requisition

Appendix VII
PM instruments calibration records

Appendix VIII
PM instruments maintenance schedule

Appendix IX
Proofs of corrective actions

Appendix X
Copy of EMT submission status from emains.doe.gov.my

(Note: Modify the list of Appendices to suit your needs. Ensure to provide evidence for whatever is discussed in the text of your FTR)

REFERENCES

(NOTE: REFER TO YOUR GUIDANCE DOCUMENT ON IETS PERFORMANCE MONITORING FOR DETAILS ON PERFORMANCE MONITORING REQUIREMENTS FOR THE VARIOUS TREATMENT PROCESSES/COMPONENTS OF YOUR IETS)

EXAMPLE OF FRONT COVER FIELD TRAINING REPORT

CERTIFIED ENVIRONMENTAL PROFESSIONAL IN THE OPERATION OF INDUSTRIAL EFFLUENT TREATMENT SYSTEMS PHYSICAL CHEMICAL PROCESSES/BIOLOGICAL PROCESSES (CePIETSO-PCP/BP)

Arial 18 font, Bold

FIELD TRAINING REPORT

Arial 12 font

Submitted to

Arial 12 font

The Director
Environment Institute of Malaysia (E*i*MAS)
Department of Environment
Universiti Kebangsaan Malaysia Campus
Locked Bag No 24
43600 BANGI, Selangor

Arial 12 font, Bold

By

Arial 12 font

Name of candidate
I/C number
Month/year

Arial 12 font

In Partial Fulfilment of the Requirement for the Certificate of Certified Environmental Professional in the Operation of Industrial Effluent Treatment Systems Physical Chemical Processes/Biological Processes (CePIETSO PCP/BP)

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EXAMPLE OF REPORT CONTENT OF

FIELD TRAINING REPORT

TABLE OF CONTENTS

FTR READINESS SELF ASSESSMENT FORM
(For own use by the FTR preparer)

DOCUMENTATION

Item	Complied? (YES/NO)	Remarks
FTR specifications (hard cover, font, spacing, contents arrangement, etc.)		
FTR copies: hardcopy and CD		
Minimum six months training period		
FTR submission within stipulated period		
Verification and declaration with company stamp on company's letterhead		

MAIN TEXT
CHAPTER 1: INTRODUCTION

Items	YES/NO?	Remarks
1.1 Background (sufficient details given?)		
1.2 Environmental commitment		
EP (stand alone and strongly worded?)		
EF (all facilities described?)		
EB (figures provided?)		
EC (organizational structure and training plan provided?)		
CePIETSO's job description provided?		
EPMC (organizational structure, TOR, meeting dates records provided)		
ERCMC (information on committee members and meeting date provided)		
ERC (information on internal reporting requirements provided?)		
ET (information on environmental report, or CSR activities, if any, provided?)		

CHAPTER 2: PERFORMANCE MONITORING OF IETS

Items	YES/NO?	Remarks
2.1 Manufacturing activities and effluent generation (manufacturing flowchart, raw materials		

table, raw effluent table provided?) (if organic effluent, biodegradability discussed?) (If organic effluent, nutrient deficiency discussed?) (significant effluent parameters identified?)		
2.2 Description of IETS (IETS flowchart and explanation, table of IETS design and operating details provided?)		
2.3 Conduct of IETS performance monitoring (situation before course attendance discussed)? (changes instituted discussed, evidence provided?)?		

CHAPTER 3: DISCUSSION OF PERFORMANCE MONITORING RESULTS

Items	YES/NO?	Remarks
3.1. PM procedure, sampling stations and frequency (PM procedure explained?) (table on Performance monitoring: sampling stations, etc. provided?) (if activated sludge: process control used explained?)		
3.2 Discussion of PM data (graphs of all relevant data plotted with control ranges and satisfactorily discussed?)		
3.3 Other PM activities (discussed satisfactorily with evidence?)		
3.4 Compliance monitoring (graphs of all significant parameters plotted and discussed?)		

CHAPTER 4: UPSET CONDITIONS AND CORRECTIVE ACTIONS

Items	YES/NO?	Remarks
4.1 Minor upsets (adequately discussed with evidence?)		
4.2 Major upsets		

(discussed with adequate details with evidence?)		
4.3 Preventive measures (adequately discussed with evidence?)		

CHAPTER 5: FURTHER IMPROVEMENTS

Items	YES/NO?	Remarks
5.1 Hardware improvements (adequately discussed with evidence?)		
5.2 Nonhardware improvements		
(adequately discussed with evidence?)		

CHAPTER 6: CONCLUSIONS

Items	YES/NO?	Remarks
Conclusions adequately discussed?		

APPENDICES

Items	YES/NO?	Remarks
1. Photographs of analytical equipment (photos plus details on model number, manufacturer- All provided?)		
2. Minutes of the EPMC meetings (formally endorsed?)		
3. IETS Performance Monitoring Report (formally endorsed?)		
4. Revised or new PM field log sheets (Used with handwritten entries provided?)		
5. Jar test results (graphs and coagulant dosing calculations provided?)		
6. Further improvements: Implementation schedule (if relevant) provided?		
7. Further improvements: EPMC meeting minutes discussing further improvement projects provided? Equipment purchase requisition (if relevant) provided?		
8. Proofs related to minor upset conditions provided?		
9. Proofs related to major upset conditions provided		
10. Equipment and instrument maintenance records provided?		

11. PM instruments calibration records provided?		
12. Others….		

REMINDERS

Submit only the complete FTRs

If you have answered YES to all those items in the above table, then you are ready to submit your FTR to E*i*MAS. DO NOT submit INCOMPLETE FTR (i.e. any items answered NO). It will be REJECTED WITHOUT the FTR BEING REVIEWED.

Policy on plagiarism

E*i*MAS places great importance to technical integrity especially in written submissions for approval and certification purposes. Plagiarism will not be tolerated. Plagiarism is to use another person's work and pretend that it is one's own. A FTR containing any plagiarized material especially plagiarized from other FTRs will AUTOMATICALLY BE REJECTED AND BE GIVEN A "FAIL" GRADE. The FTR will be returned to the submitter and a letter of rejection sent to the manager of the company the submitter is attached to.

E*i*MAS Certification Center
January 2022