Egyptian Environemental Affairs Agency

(EEAA)

Egyptian Pollution Abatement Project (EPAP)

General Environmental Inspection Procedures Manual

September 2002

Preface

This manual was developed to assist environmental inspectors in undertaking their responsibilities. The manual is equipped with inspection tools developed by experts in the inspection field.

The inspection unit in EEAA has reviewed the manual and its comments have been incorporated. The unit has enriched the manual with inspection forms.

Table of Contents

Annexes

Acronyms

BOD	Biological Oxygen Demand
CAA	Competent Administrative Authority
CAP	Compliance Action Plan
CEO	Chief Executive Officer
EEAA	Egyptian Environmental Affairs Agency
EEIF	Egyptian Environmental Initiative Fund
EFNIC	Environmentally Friendly and New Industrial Cities
EIA	Environmental Impact Assessment
EMU	Environmental Management Unit
EPAP	Egyptian Pollution Abatement Project
IPIS	Industrial Pollution Information System
MSDS	Material Safety Data Sheet
NEAP	National Environmental Action Plan
RBO	Regional Branch Office

1. Environmental Inspection

The environmental inspection on industry aims to support and strengthen the participation of both the environment and the public health, since the pollution generated from the industrial establishments has a negative impact not only on the environment, but also on public health. Therefore, it should be that most of the procedures, that implemented by industrial establishments to reduce the negative environmental impacts, will also reduce the effects that represent a threat to the health of workers within the establishment and the people living in the regions affected by the emissions from the establishments.

In this respect, the effectiveness of the inspection on industrial establishments will lead to the protection of the environment and the protection of the workers and the public health.

The environmental inspection entails numerous interrelated aspects, including planning, implementation and information aspects. The concerned entities within the Egyptian Environmental Affairs Agency (EEAA) carry out different types of inspection, including comprehensive (periodic) inspections and inspections in response to complaints. This manual presents the inspection methodology for the inspectors of EEAA and its Regional Branch Offices (RBOs) to assist them in implementing law 4/1994.

In order to enhance the effectiveness of environmental inspection, there is a need to establish an integrated and unified system for environmental inspection in Egypt. This will positively contribute to the following:

- Utilization of specialized expertise in the environmental field within the different ministries.
- Overcoming the limited resources and the variation in the level of experience within the inspection entities concerned with multimedia inspection.
- The ability to deal more effectively with the increasing environmental problems and the expansion of industrial establishments with varying activities.

Table (1) presents the inspection entities and types of inspection within their responsibility.

Table (1) Entities Conducting Inspection on Industrial Establishments

The Entity	Type of Environmental Inspection	Measurements and Analyses
EEAA and its RBOs	Multimedia inspection	In the laboratories of the RBOs and the Central Laboratory of EEAA.
The Environmental Management Units (EMUs) in the Governorates	Multimedia inspection	_____
Ministry of Manpower and Immigration	Inspection on the working environment (the Safety and Occupational Health)	The inspectors are equipped with equipments for measuring the parameters of the working environment only.
Ministry of Public Works and Water Resources (Ministry of Irrigation)	Wastewater from industrial establishments discharging into the Nile, canals, etc.	The wastewater is analyzed in the laboratories of the Ministry of Health upon a request from the Ministry of Public Works and Water Resources.
The General Organization for Sanitary Drainage	Wastewater for industrial establishments discharging into public sewer system	In the laboratories of the Ministry of Health upon a request from the General Organization for Sanitary Drainage

The homogeneous system for environmental inspection could be based upon:

- Unified of the environmental inspection methodology
- Unified of the inspection tools including the inspection checklist, records, reports, etc.

The effectiveness and efficiency of the system could be improved by:

- Setting protocols between the ministries and the different institutions concerned with the environmental inspection.
- Coordination between different inspection entities in preparing the inspection plans. This could be achieved through setting common general principles.
- Exchange of information between the different inspection entities, taking into consideration that EEAA and its RBOs should be acting as the information node, thus enabling it to carry out its important national duty of protecting the environment in Egypt.

This "Environmental Inspection Procedures Manual" is considered one of the bases that unifies the objectives and the methodology of the environmental inspection on the industrial establishments.

This manual covers the inspection process from its technical, legal and procedural aspects. It presents the field inspection methodology in details as well as the role of the concerned entities in the different inspection stages. This is presented in the four chapters of the manual as follow:

- Chapter one includes a general background on environmental inspection and a general description of the inspection process on industrial establishments addressing its objectives, the field of specialization of environmental inspectors, the administrative roles for the environmental inspectors, the functions of the judicial office and the qualifications that inspectors should have.
- Chapter two covers the policies and planning activities for the environmental inspection processes.
- Chapter three includes the different types of environmental inspection.
- Chapter four contains the roles and responsibilities of the different entities involved in the inspection process.

To assist inspectors to carry out the inspection process effectively, the manual was supplemented with a number of annexes containing model inspection tools used in the inspection activities. These tools include:

- The form containing the main data of the establishment
- The environmental inspection checklist
- Inspection checklist on the environmental register and the hazardous waste register
- A model for an inspection plan on a large industrial establishment
- The environmental inspection record
- Principles and main technique for conducting meetings
- Information that should be available regarding the establishment
- List of documents and registers that should be reviewed during the inspection,
- Instruction for sampling guidelines a model for the technical inspection report.
- The environmental legislations applicable on industrial establishments and its relevant articles, to assist the environmental inspector in identifying the violations on a legal basis.

1.1 Inspection Objectives

The general inspection objectives includes:

- Ensuring the compliance of the establishments with the applicable environmental laws and legislation[1]

[1] The environmental regulations applicable to industrial establishments are listed in Annex (K)

- Identifying the effect of the industrial establishments on the environment.
- Enforcing law 4/1994 through filing lawsuit to apply legal sanctions[2] (contraventions/delinquencies/crimes) on violating establishments.
- Contributing to the development of environmental performance of industrial establishments through guiding them in utilizing the technical and financial support mechanisms in EEAA, which address waste management and treatment, applying self- monitoring systems and application of pollution abatement programs at source.

1.2 Fields of Specialization of the Environmental Inspectors

The inspectors in EEAA and its RBOs with their different authorization (those possessing judicial impoundment and those possessing administrative impoundment) are responsible for protecting the environment from pollution resulting from industrial establishments.

In order to enforce the environmental legislations on industrial establishments, the inspector should be well aware with the limits and the scope of his responsibilities. This will insure the proper implementation and the compliance with the stipulations of the laws, regarding the roles and responsibilities of EEAA's employees in hollow-up of environmental compliance of these establishments. The stipulations of law 4/1994 regarding environmental compliance of industrial establishments are presented as follows:

Entry to the establishment and periodic follow-up of the environmental register that registers the effect of the establishment activities on the environment (environmental register) and to take the necessary samples, carry out the required tests to investigate the effect of these activities and to insure the compliance of the establishment with the set standards for environmental protection, in accordance with articles 5 and 22 of law 4/1994 and articles 17 and 18 of its executive regulations. The allowable limits were also set by the law and are stated in the annexes of the executive regulations.

Hazardous Substances and Wastes, law 4/1994 has set specific rules and conditions for handling hazardous substances and wastes (article 29-33 from the law and articles 25-33 of the executive regulations). The environmental inspector is responsible for following-up on the compliance of the establishments with these articles.

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[2] The legal sanctions are based on the Manual of Crimes stipulated in law 4/1994. The manual is prepared by Counselor El Beshary El Shorbagy and reviewed by Counselor Mohamed Abdel Aziz El Gendy. It was issued by EEAA in 1998.

Protection of Marine Environment, according to item 38 of article 1 of law 4/1994, EEAA is one of the entities concerned with protecting the marine environment within the scope of the responsibilities stated in law 4/1994. These responsibilities address the industrial establishments in articles 26, 70 and 71 of the law and article 58 of the executive regulations. Annex 1 of the law 4/1994 has set the standards and specifications for the discharge of a number of substances in the marine environment, and annex 10 has identified the polluting substances with are non biodegradable and are prohibited to be discharged in the marine environment by industrial establishments.

Protection of Air Environment, article 35 of law 4/1994 and article 36 of the executive regulations has obliged the industrial establishments to ensure that emissions or leakages of air pollutants do not exceed the maximum limits permitted for ambient air and determined in annex 6 of the executive regulations. Article 40 of Law 4/1994 and article 42 of the executive regulations have set the conditions for the usage and burning of fuels or other substances in industrial establishments, the law has also prohibited the usage of fuel oil (Mazot) in residential areas.

Solid Waste, in case of non hazardous solid wastes, the environmental inspector is responsible for ensuring the safe disposal of solid waste and that it is not disposed or burned in a place other than the special sites designated for such purposes, Any violation in disposing the solid waste will be considered a violation to article 37 of law 4/1994 and article 38 of the executive regulations. In case the solid waste is hazardous, the environmental inspector should ensure the compliance of the establishments with the conditions of handling, storage and disposal of hazardous waste stated in the articles of law4/1994 that were mentioned above.

Protection of the Work Environment[3], articles 42, 43, 44, 45 from law 4/1994 the owner of an establishment should take all necessary precautions to ensure that emission of air pollutants inside the work premises is within the permissible limits set in annex 8 of the executive regulations. According to the law the owner of an establishment should take the necessary procedures to maintain the temperature and noise intensity inside the work place within the permissible limits set in annex 7 (table one) and annex 9 of the executive regulations.

Protection of the Nile River and the Public Sewer Networks, the environmental inspector is responsible for inspecting the wastewater of industrial establishments being discharged on public sewer networks (law 93/1962) or fresh water bodies (law 48/1982). In case a violation

[3] Work environment is a common field between environmental inspectors and inspectors of Ministry of Manpower and Migration since they are both concerned with this field among their several responsibilities.

is detected the Competent Administrative Authority[1] (Ministry of Public Works and Water Resources or the General Organization for Sanitary Drainage) is solely responsible for proving the violation through sampling and taking the enforcement procedures towards the violating establishment.

The licensing authority for handling of hazardous substances and wastes, has the right to revoke the license or stop the activity by a justified decision. In several cases example of which if EEAA concludes that its is unsafe to handle any of the substances and wastes

The procedures and conditions for granting a license for the handling of hazardous substances and wastes are stated in article 26 and 27 of the executive regulations of law 4/1994. The concerned ministries , each within its scope of competence and in coordination with the Ministry of Health shall issue tables for hazardous substances and wastes according to article 25 of the executive regulations.

The Minister of Housing, shall determine the locations and conditions for the disposal of hazardous waste after consulting the Ministries of Health and Industry and EEAA

Annex (A) illustrates the different types of penalties to these violations from felonies and delinquencies as stipulated in the law. For all of the articles, except those related to discharge on waterway, the environmental inspectors investigate the establishment compliance and implement the enforcement measures. In case of the articles, related to the discharge waterway in the law the inspectors only investigate the compliance of establishments and inform the Ministry of Public Works and Water resources that takes the enforcement measures since it is the CAA responsible for enforcing law 48/1982.

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[4] According to law 48/1982 and article 89 of law 4/1994, the Ministry of Public Works and Water Resources sets the period during which the violating establishment should remove or rectify the violating works. If the violating works are not removed or rectified by the due date, the Ministry of Public Works and Water Resources shall have the right to take procedures to remove or rectify the violation by administrative means. Currently, the Environmental Inspection Unit in EEAA takes samples from wastewater discharged into the Nile or to watercourses and tests their compliance with the limits set by law 48/1982. In case of noncompliance, violations are issued.

1.3 Environmental Inspection Activities

The environmental inspector has numerous tasks, that could be classified into two main activities, the administrative impoundment and the judicial impoundment role. The inspectors carry out the tasks of the administrative impoundment in the comprehensive or periodic inspection, while the tasks of the judicial impoundment, implemented by the judicial officers are initiated once a violation is detected.

1.3.1 Administrative Impoundment

The environmental inspector carries out the responsibilities listed under the administrative impoundment activities, to insure the compliance of the industrial establishments with law 4/1994 responsibilities previously described. These responsibilities could be summarized as follows:

- Acquiring clarifications through meetings with the establishments officials.
- Congruence of the data stated in the environmental register to the actual situation in the establishment.
- Conducting inspection and gathering data on the environmental performance of the establishment (taking samples and checking documents).
- Identifying the violations (if any).

The inspection team prepares the technical inspection report which contains the results of the field visit and violations identified based on the results of the laboratory report. The technical inspection report is then submitted to the environmental inspectorate[5] together with the laboratory report and the documents of the establishment (if available). In case the report does not include any violations, it is filed in the inspectorate. If the violations were prored, the procedures included in law 4/1994 should proceed (see annex be concerning the inspection forms).

1.3.2 Judicial Impoundment Activities

As stated by article 102 of law 4/1994, the Minister of Justice could issues decrees granting judicial impoundment to a number of environmental inspectors. The inspector who possesses the judicial impoundment[6] is known as a Judicial Officer and he is supervised by the administrative authority in his administrative activities. The Public Prosecutor, is responsible only for supervising the investigation

[5] The environmental inspectorate is the authority to which the inspector reports.

[6] For more details, see the Guiding Manual for the Judicial Officer in the criminal procedures related to law4/1994. The manual is prepared by Counselor/ Mohamed Abdel Aziz El Gendy and has been issued by EEAA.

procedures carried out by the Judicial Officer, and not the other activities.

It is also possible for the Public Prosecutor to assign the Judicial Officer the responsibilities of conducting investigations regarding the complaints and received directly by the Public Prosecutor, or to complete the investigation procedures.

The environmental judicial officer can undertake both the administrative and judicial impoundment activities. The activities of the judicial impoundment starts when an environmental violation is detected in an industrial establishment during the implementation of the administrative impoundment activities or in complaint based inspection at this stage, the Judicial Officer is responsible for implementing the following tasks:

- Carrying out the investigation procedures which are the preparatory procedures carried out prior to the judicial proceedings. The investigation procedures are summarized as follows:

    - Investigating and gathering of necessary data and information on the environmental incident. The Judicial Officer could assign assistants to help him with his activities
    - Accept complaints and protests.
    - Obtaining necessary clarifications from the different individuals and sources connected to the concerned environmental incident.
    - Inspecting the location of the incident, thorough observations to prove the environmental incident and gathering all the evidence related to the incident and its effects. The Judicial Officer could seek assistance from experts in different fields to help him in the investigation activities.
    - Implementing the confiscation procedures and preparing a record to be signed by the establishment official
    - Witness hearing for those having information regarding the incident or that are suspected to be responsible for the occurrence of the incident (contravention, delinquency, felony). The complainant

should be questioned by the Judicial Officer without being under oath[7]

- Preparing records to document the location and timing of the incident and the investigation carried out and its timing. The interviews carried out with the witnesses should also be recorded with no changes. These records should be signed by the witnesses and the assigned experts and should be dated and the name of the judicial officer, his position and geographical affiliation should be stated. It is not permitted to remove or add anything to the judicial record after it is being signed.

- In some cases, the environmental violation is witnessed by the Judicial Officer, or its evidence are quite obvious, thus the investigations should be carried immediately before the evidence of the incident fade away. In this respect, the judicial officer is authorized on exceptional events, to conduct some of the investigation activities such as in the cases of red-handed[8] violations.
- Offering reconciliation[9] and collecting the fines in cases of violations whose penalties are only fines.

1.4 Capabilities that Should be Available in the Inspection Team

The capabilities that should be available in the inspection team could be classified into two types. The first type entails the individual skills of each team member, which are considered the basis necessary for inspections carry out his duties efficiently. The second type entails the information and knowledge that should be available within the team but not necessarily in each individual. This means that each inspector should posses knowledge in a certain field or in a specific industrial sector or activity (chemical industries, food industries, etc.). The following are the two types of skills that should be available in the inspection team.

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[7] They will be under oath only in cases of emergencies (due to exceptional circumstances). Normally, the oath will be carried out in front of the judge in the court

[8] The red-handed cases are the cases where the time interval between the occurrence of the crime and it being discovered is very short. In these cases, the law has given exceptional jurisdictions to the Judicial Officer, which includes issuing order to the people where the incident has occurred not to leave the place of the incident until the judicial record is written.

[9] The law has stipulated that the concerned Judicial Officer (for any violation where a fine should be paid) should offer reconciliation to the violator or his attorney and this reconciliation should be stated in the record.
The Minister of Justice has issued a decree assigning the Judicial Officers of EEAA the responsibility of collecting the fines and allocating the Environmental Protection Fund.

a Individual Skills

- Capability of investigating, analyzing, reasoning and gathering data and evidence through effective interviewing individuals.
- Communication skills.
- Capability of achieving the credibility and transparency throughout his job.

b Team Knowledge Requirements

- Sufficient familiarity with the industry being inspected and its sources of pollution
- Acquaintance with the requirements of the safety and occupational health
- Familiarity with the laws, regulations and protocols related to the environment.
- Familiarity with the policies and procedures of EEAA concerning the administrative and judicial impoundment.
- Familiarity with the environmental legislations and the rights of the inspector and the judicial officer entitled by the law.

2. Policies and Planning

The commitment of the inspectorate to a strategic policy adopted by EEAA will definitely has a positive impact on the environmental inspection process. The inspectorates should conduct short-term and long-term planning.

The inspectorate is considered one of the important parties in the inspection process. The success of the inspection system depends on the efficiency of the inspectorate as it provides inspectors with the information, builds their capacity through continuous training and plays an important role in the follow-up of enforcement and legal measures taken against violating facilities.

2.1 Policies

There are a number of inspection-related policies that the inspectorate and inspectors should be committed to in order to guarantee the homogeneity of the inspection process such as the coordination between different inspection entities, respecting facilities rights and assisting facilities in achieving compliance. The following is the general framework for policies that should be discussed and documented by EEAA, and adopted by all inspection to be updated as need arises.

2.1.1 Encouraging Establishments to Achieve Voluntary Compliance

Voluntary compliance of establishments is considered the most effective approach to reach a better environmental status, and consequently fulfill the main objective of environmental compliance. Once the establishment believes in the necessity and feasibility of improving its environmental performance, attempts to hide violations will be minimized and the establishment will move to the stage of facing its environmental problems aiming at pollution abatement. There are various mechanisms through which establishments can be encouraged cooperate with the inspectorate. These mechanisms include:

- Raising environmental awareness of establishments which relies on two major aspects. The first is convincing the establishment with the economic benefits of adopting the "Pollution Prevention at Source". This will lead to reducing the costs of waste treatment, material consumption, occupational injuries, etc,. The second aspect is avoiding fines and penalties associated with environmental violations. These penalties might include shutting down the establishment, imprisonment and others, which might hinder economic activities.
- Directing establishments to the technical programs of EEAA that give financial or technical support to enhance the voluntary compliance approach. These sources could be one of the projects at EEAA or other Ministries or authorities.

- Guiding the establishments to the environmental periodic and guidelines developed by EEAA to assist them in different fields such as guidelines for preparation of environmental registers, lists of hazardous substances, self-monitoring manuals, etc.

2.1.2 Coordination between Inspection Entities

EEAA has signed several protocols and cooperation agreements with ministries concerned with inspection on certain environmental aspects. Moreover, EEAA will implement coordination mechanisms between the two main entities for environmental inspection; RBOs and EMUs. The mechanisms include the following:

- Participation of RBOs and EMUs in joint planning of inspection activities
- EMUs should utilize the laboratory capabilities of the RBOs when conducting inspection
- Setting clear distribution of responsibilities between different inspection entities; EEAA environmental inspection unit, RBOs and EMUs

2.1.3 Adopting Announced / Unannounced Inspection Principle

Informing the establishment of the date of field inspection data prior to the visit allows it to prepare the required data and ensures the presence of the environmental staff at the establishment. This will facilitate providing the inspection team with the required data especially in large establishments. However, this approach requires a high environmental awareness at the establishment else establishment might take their precautions to hide violations such as closing the production units that cause pollution. This will hinder the inspection process and will affect its results.

Accordingly, unannounced inspection is preferred in a number of cases.

2.1.4 Responsibility of the Inspectorate Towards Corrective Actions

It is important that the environmental inspectorate does not propose any technical recommendations concerning the corrective actions for violating establishments. However, for improving the environmental status of the facility, it is useful that the inspectorate directs the establishments to technical or financial support, in EEAA, to assist them in achieving environmental compliance as mentioned earlier.

2.1.5 Respecting Facilities Rights

It is important to respect the facilities rights during or after field inspection. These rights include:

- The confidentiality of all collected information and inspection reports should be maintained
- Inspectors should confine to their authorities

- Field inspection conducted by different entities on the same facility should not be on close periods of time. Facilities are sometimes inspected by different inspection entities such as environmental inspectors (from the environmental inspection unit, RBOs or EMUs), inspectors from the Ministry of Manpower, General Organization for Sewage Drainage and the Ministry of Irrigation. Such case represents a burden on the facilities and results in a potential contradiction between different inspection results which affects the identification of violations and implementation of enforcement actions.
- The inspectorate should investigate the implementability of corrective actions. For examples, small establishments do not have enough place for a treatment unit. In these cases, it is useful that the inspectorate consider assisting the facility in finding a suitable solution for its environmental problem rather than only recording the violation.
- Principles adopted for different establishments in a fair and equal manner.
- Possibility of informing the establishment of violations before adopting enforcement procedures.
- Facilities right to choose the method for violation rectification.

2.2 Planning

Proper planning is an important factor affecting the efficiency of inspection process. Planning should address several factors such as setting inspection priorities, the efficient use of resources, providing inspectors with information and the continual improvement of their capabilities.

Preparing short-term and long-term inspection plans is one of the main responsibilities of the inspectorate. It is useful to take strategic plan of EEAA into account when setting the plan. Moreover, the main inspection objectives in a certain period of time (5 years for example) according to the National Environmental Action Plan (NEAP) should also be taken into consideration.

Moreover, a certain percentage of inspections should be assigned to complaint-based inspections.

The major components of the inspection plan include:

- Identifying inspection priorities
- Identifying the timeframe for plan execution
- Identifying the required resources including human, financial, etc,.

There are several aspects that should be taken into consideration while developing the inspection plan due to their impact on the priorities and implementation of the plan.

2.2.1 Environmental Status

The data related to the environmental status is an important basis for planning. The inspectorate could acquire the data from two main sources. The first is the

pollution source itself (the establishment) where information could be acquired from CAPs; new industrial and environmental cities programs; periodic inspection; information related to similar industries; inspection reports as well as EIA forms and studies.

The second source is related to the receiving media. The medium characteristics are monitored through EEAA monitoring programs in different areas of Egypt, providing data regarding the types, percentages and locations of pollution. The data is stored at the Industrial Pollution Information System to be easily retrieved. (see figure 1).

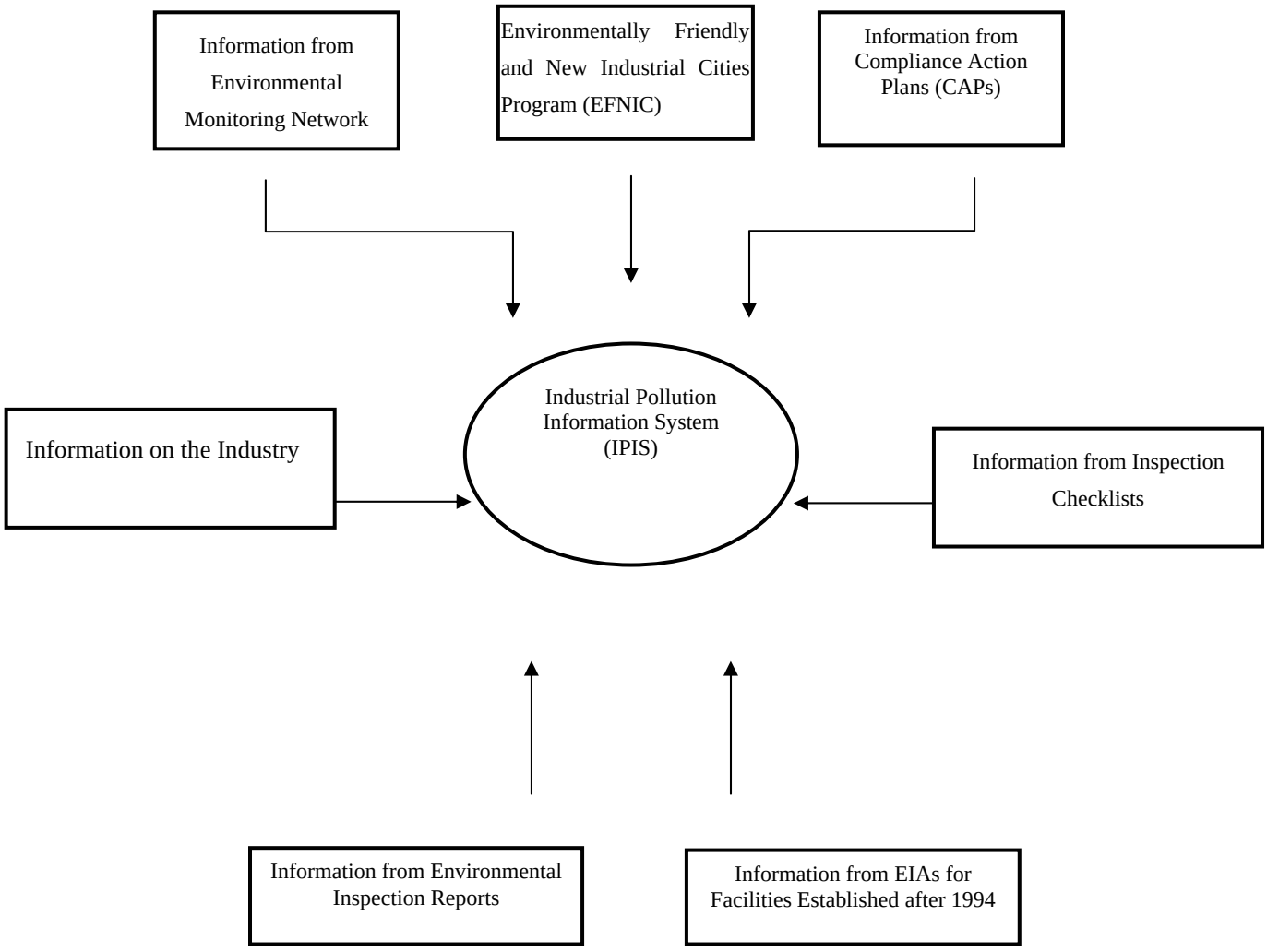


Fig (1) Sources of Information

2.2.2 Criteria for Identifying Plan Priorities

Identifying the inspection priorities is one of the main elements upon which the inspection plan is based. Criteria for identifying the priorities include:

a. Significance of Pollutants

The inspection priorities should include issues related to hazardous wastes and substances, that might represent imminent danger on public health even if its impact is reversible or non-cumulative. These represent major environmental concerns and therefore should be considered in the inspection priorities.

b. Industrial Sector

Environmental pollutants differ from one sector to another. Some sectors are known for their high pollution such as chemical industries, petroleum sector and some activities of the spinning and weaving sector such as dyeing and sizing. Accordingly, the nature of industrial sector is an important factor in setting inspection priorities.

c. Nature of the Area

The nature of area differs according to its environmental conditions or its specific nature such as touristic or archeological areas, etc.

The areas could be classified as follows:

- Sensitive areas such as coastal areas, River Nile and canals used as a source for potable water and for irrigation, areas with underground reservoirs
- Crowded residential areas
- Highly polluted residential areas where industries are concentrated
- Special areas such as touristic areas, important agricultural areas

d. Size of the Establishment

Establishments can be divided into small, medium and large industries. Medium and large industries are quite similar but small industries have a specific nature as they lack the advanced technology and financial resources in most cases. Moreover, the number of employees is usually small and the activities are limited, which makes it feasible to implement a common or a central pollution abatement measure for a group of these industries if they are close to each other.

e. Nature of the Receiving Media

The nature of the receiving media is considered one of the major criteria of inspection priorities. In most cases, the environmental

impacts of pollutants decrease with its transfer from the liquid to the gaseous state or from the solid to liquid state because the pollution dispersion coefficient in air is higher than that in water. Moreover, the health impact of inhaling pollutants is more significant than that of swallowing them.

Significance of environmental impacts can be evaluated according to the following:

- Reversibility of environmental impacts, where the impacts disappear with the elimination of the source such as noise impacts or impact related to dust
- Lifetime of pollutants
- Geographical boundaries of pollutants i.e. whether they are confined in a local area or they are subject to extend to a regional scale.
- Whether the impact is direct or indirect.
- Whether pollutants accumulate with time and if accentuation pollutants are more harmful that non accumulated ones

2.2.3 Identify Financial Resources

Financial resources affect the activities of the inspectorate. The budget should account for the inspectorate plan to develop inspection resources including the capacity and capabilities of human resources as well as financial resources.

In Egypt, there is a large number of non-complying industrial establishments. Due to the limited available resources, proper planning is important for the optimum utilization of available resources, which will lead to achieving the main objective of environmental inspection which is the compliance of the largest possible number of establishments.

2.2.4 Building Inspectors Capacity

Training of inspectors and team leaders is one of the factors that develop and increase the efficiency of inspection on industrial establishments. Therefore, the inspectorate should provide the basic and sufficient training to all inspectors before they undertake inspection activities.

The training modules for inspectors should include the following basic aspects:

- Safety and occupational health
- Objectives and importance of environmental inspection
- Planning of inspection activities

- Roles and responsibilities of the inspection team in different inspection stages
- Important environmental regulations
- Egyptian industries, production processes, associated utilities and environmental pollution generated
- Inspection of the facility registers and documents; environmental register and hazardous waste register
- Using inspection checklists, preparing inspection reports and judicial records
- Information collection methods, observation techniques and communication skills
- Sound environmental management of industrial establishments such as continual improvement of environmental performance, self-monitoring system, cleaner production technology
- Pollution abatement systems for air and water pollution, management of solid wastes, management of hazardous substances and wastes, etc.
- Sampling and using mobile measuring equipment
- Using computers

2.3 Recommendations for Reviewing Environmental Regulations

Since environmental inspectorates are the most effective entities in monitoring the application of environmental regulations, they are expected to present their recommendations to EEAA for reviewing the environmental regulations in different fields such as:

- Ability of the industry to comply with allowable limits
- Clarification of enforcement procedures
- Modification of the allowable limits
- Clarification of roles and responsibilities of environmental inspectors

2.4 Evaluating Inspectorate Performance Efficiency

Evaluating the inspectorate performance regarding planning, implementation, and enforcement is considered an effective tool in developing and improving the planning process. Some of the indicators that can be used to assess the performance efficiency are:

- To assess inspection efficiency: feedback on inspectors performance; accuracy of inspection and its duration.
- Comprehensiveness of inspection reports: level of fulfillment as well as accuracy and consistency of information
- Inspectorate performance: ensuring rectification of violations; comparing rectification to objectives; improvement of indicators of the targeted establishment

The feedback process is considered a major factor in the inspection system. It comprises several integrated phases including: field inspection, compliance promotion, inspection of corrective actions and implementation of enforcement procedures. This process allows the acumination of experiences in the fields of compliance and enforcement (whether positive or negative). Moreover, it supports the concerned entities in issuing licenses and permits and supports the process of reviewing and updating environmental laws.

3. Inspection Activities

The environmental inspection relies on the interaction between the different bodies involved in the inspection process, namely the inspectorate and the inspection team comprising of the team leader and the team members. The inspection process takes place in three stages, which are the pre-inspection stage, the inspection stage and post inspection stage. The interaction between the different parties lies in the coordination between their various tasks in the different stages.

The efficiency of the environmental inspection increases with the increasing co-operation and coordination between the involved parties, as the increasing efficiency of the involved individuals as well as respecting the responsibilities and mandates of the different parties. Prior to conducting the inspection, the inspectorate has the responsibility of developing site-specific inspection plan for industrial facilities. Its responsibilities in the post inspection stage include preparation of notifications for the different competent administrative authorities (CAA), such as the Ministry of Irrigation, the General Organization for Sanitary Drainage regarding the violations of law 48 for 1982 or law 93 for 1962 respectively, so that the authorities can take the necessary measures for rectifying the non-compliances. Moreover, according to law 4/1994, the mandates of the inspectorate involve the legal pursuit for the facilities violating law 4 requirements.

Law 4/1994 has set specific mandates for the judicial officers in order to enhance the efficiency of the environmental inspection process. Therefore, it is deemed both essential and beneficiary to include judicial officers as members of the inspection team during the inspection visit.

This chapter presents the activities implemented during the different types of environmental inspection as well as the follow up on the results of the inspection activities. Inspection can be classified into two types:

- **Comprehensive/Periodic Inspection**
  It is a comprehensive (multimedia) inspection and is carried out on periodic basis to update information especially in case of modifications in the establishment such as modification in the production process, increase in the production capacity or any other modification in the establishment. In this case, inspection is conducted to update information and include new data and the visits are conducted in response to information provided by the establishment or by another source.

- **Specific Inspection Including the Following Types**
  - Inspection in response to complaints
  - Follow up inspection for the violating facilities
  - Inspection campaigns

3.1 The Comprehensive (Multimedia)/Periodic Inspection

It is an activity that is carried out on periodic basis and is determined through the inspection plans of the inspectorate. This type of inspection entails inspecting the environmental pollution (gaseous, liquid and solid), which is generated from the different production units and utilities within the industrial facility. This type of inspection aims at providing a comprehensive understanding of the different processes taking place in the facility as well as ensuring and following up on the environmental compliance with law 4/1994. The inspection procedures is carried out according to the following stages:

- ***Entering the Facility***
  The inspection team enters the facility after presenting the inspection card[10] or a written inspection order issued by the environmental inspectorate. After completion of the entrance procedures (signing in the visitors register, etc.), the inspectors meet with the environmental managers or the manager of the facility. In case the facility refuses receiving the inspection team, the circumstances of the rejection are to be recorded and the inspectorate is to be informed.[11]

- ***The Opening Meeting***
  The inspection team conducts an opening session with the facility representatives, particularly in cases where comprehensive inspection is carried for the first time. The opening session is a short meeting carried out for the purpose of introducing the team members and explaining the aim of the visit as well as requesting the necessary documents and procedures taken by the facility in order to cooperate with the inspection team.

- ***The Field Inspection***
  The inspection includes the following tasks[12]:

  - Inspection of the environmental register and the hazardous waste register and ensuring the congruence of the recorded data with reality.
  - Investigation of the different production units and the utilities within the facility. Interviews and meetings with concerned personnel are carried out when necessary.
  - Determination and precise description of sampling locations and time and the supervision of the sampling procedures according to Annex I (sampling guidelines) and identifying the possible parameters that can be measured on site using the available equipment with the team. (see annex I for sampling guidelines)

[10] The card of the judicial officer accompanying the inspection team

[11] If the facility restrains the team from carrying out his duties, the team is entitled to inform the police

[12] The tasks are divided between the team members and are conducted in parallel.

- Investigation of compliance of the facility with EEAA requirements in the EIA approval for facilities established since 1994.

- ***The Closing Meeting***

  After finishing the site tour, the team holds a closing meeting with the company representatives. In this meeting, the inspectors request missing information or unavailable data. At the end of the meeting, the inspection team writes the inspection record including the name of team members, the units and utilities inspected, and any comments from the inspection team regarding the different environmental aspects (the environmental register, the hazardous waste register, licenses, storage, improper disposal of the solid and/or the hazardous waste, visual remarks regarding the industrial wastewater etc.). The record should include the measurements carried out by the team and the periods of exposure of workers to pollutants as well as the procedures followed in sampling. Finally, the facility representative is asked to sign the inspection record. If he refuses to sign, this should be written in the record. It should be noted that violation requiring laboratory analysis should not be included in the record, only those that could be proved without the need of laboratory analysis (such as violations related to hazardous waste licensing) are recorded. Annex J indicates the model for the inspection record. Fines are collected for the violations on spot according to law 4/1994.

- ***Technical Inspection Report***

  The inspection team writes the technical inspection report for the industrial facility, after examining the laboratory report. The inspection report includes the names of the inspection team members, date of visit, information regarding the industrial facility, brief description of its activity, the inspection results and the detected violations based on the laboratory report. All members of the inspection team should sign the report.

  The inspection report is to be submitted to the inspectorate together with the laboratory report and the facility documents. In cases where no violations were detected in the facility, the inspection report is filed at the inspectorate. In cases where violations are detected, the inspectorate informs the CEO[13] who addresses the concerned administrative authority (CAA). The CAA officially notifies the facility by a registered letter, to rectify the violations (annex B includes a notification form). The public prosecutor could also be notified to take the necessary legal measures.
  The penal law states that the judicial officers should notify the public prosecutor in certain cases.

[13] The RBOs Manager could also be informed, according the CEO's decree number 17/2001, as they have the right to address the Governorate General Secretaries directly and inform them about the detected violations in order to take the necessary rectification procedures.

The industrial facility is notified with the violations included in the inspection report based on the laboratory analysis in parallel to taking the necessary enforcement procedures.

3.2 Specific Inspection

3.2.1 Follow-up Inspection for the Violating Facilities

This type of inspection is considered specific inspection aiming at ensuring the rectification of the detected violations. The follow up inspection is carried out after the legal period granted to the facility determined by article 22 of law 4/1994. This type of inspection involves the following stages:

- The inspector examines the previous inspection report before conducting the field visit, in order to identify the violation and its location and date.
- At the end of the legal time period (maximum of 60 days), the inspector carries out a follow-up inspection to ensure that the facility is implementing the necessary corrective measures. In case the violations are rectified, the inspection report is filed. If the violation persists, the inspectorate informs the CEO (or the head of the concerned RBO) in order to notify the concerned CAA to take the necessary enforcement measures, either close the facility or stop the violating activity or claim compensations.

3.2.2 Inspection in Response to Complaints

Protecting the environment is regarded as a joint responsibility of different parties from the community including the governmental entities, individuals and the NGOs. Law 4/1994 acknowledged this principle and stipulates in article 103 that every citizen or association concerned with environmental protection is entitled to report any violations to the articles of the law.

The complaints are submitted to EEAA, or its RBOs, or the EMUs in the different governorates, or the municipalities. The complaints could also be forwarded to the public prosecutor, who seeks the assistance of the environmental judicial officers to investigate them.

In such cases, inspection is concerned with specific incidents occurring in the facility and thus the periodic inspection checklists are not used. This type of inspection does not entail the usual inspection procedures, such as the opening/ closing meeting or different inspection stages discussed above. However, an inspection record is written as well as a technical report including the detected violations.

The procedures for complaints-based inspection could be summarized as follows:

- The judicial officer head for the location of the incident accompanied by the environmental inspectors, and the laboratory personnel and other experts, according to the incident. The team should be equipped by necessary measuring and safety equipment.
- Conduct the required investigations
- Prepare an inspection record including:
  - Date and time of the report
  - Date, location and evidence of the incident
  - Document the conducted investigations
  - Determination of the location of the incident.
- A detailed technical report is prepared including the results of taken measurements, which should be attached to the report.
- The judicial officer submits the report and the collected evidence to the inspectorate, that informs the CEO (or the head of the concerned RBO)
- The public prosecutor could be directly informed or indirectly through the concerned police station.
- The inspectorate carries out the follow-up procedures and the legal pursuit.

3.2.3 Inspection Campaigns

- Carrying out inspection campaigns requires the availability of large numbers of inspectors as well as long time periods.
- The aim of such campaigns is to identify the sources of pollution in a specific geographic area or within a specific industrial sector.
- Inspection campaigns usually investigate a public complaint such as the death of fish in a specific water body. Thus the aim of the inspection campaigns is to investigate the types and sources of pollution. If violations are detected, a judicial record is written.
- In some cases, the campaigns are carried out on small industries within the same industrial sector. The inspection unit can assist these industries in finding a common pollution abatement measure. These campaigns do not require the participation of judicial officers.
- In most cases, the presence of judicial officers is needed in the inspection campaigns. Experts are sometimes consulted.
- Experts in data analysis could also be needed to analyze the large amounts of data collected since this type of inspection involves data collection, observations, collecting evidence, etc.

- Taking the necessary legal measures including procedures of confiscation, writing the legal records, etc.
- The inspectorate follows up on the campaign results and the legal pursuit.

Table (2) provides a comparison between the different inspection types. The comparison includes the resources, number of inspectors, time period of inspection, nature of inspection, data required and inspection procedures.

Table (2) Comparison between the Different Inspection Types

Comparison Parameter	Inspection Activity			
	Comprehensive (Periodic*)	**Follow up on violating facilities**	**Complaint-based Inspection**	**Inspection Campaign**
Resources	Requires high resources that are within the capacity of the inspectorate	Requires less resources than periodic inspection	Resources differ according to the types of complaints	High
Number of Inspectors	Around 2-3 according to size of facility	One inspector is sufficient	Depends on the type of complaints	Large numbers
Time Needed for Inspection	1-2 days according to size of facility	Less than one day	One day	Long time period
Nature of Inspection	Multimedia	One or more medium	One or more medium	One or more medium
Size of Data Required	Substantial	Updating of data is needed before inspection	Restricted to facts related to the complaint	Substantial (related to geographic area or industrial sector) integration of data is necessary
Inspection Stages	Opening meeting, field inspection, closing meeting	Inspection is carried out immediately after reviewing the facility file at the inspectorate	Direct inspection for collecting evidence related to the complaint	Direct inspection is carried out for several facilities

* EEAA requirements based on the EIA review are taken into consideration for facilities established since 1994

3.3 Enforcement and Follow– up Procedures

After the environmental inspectors conduct the field inspection on the industrial establishment, the inspection report is prepared including the results of the laboratory analysis. The report with its attachments is submitted to the inspectorate that takes the required procedures according to the type of violation as shown in the following.

- **In Case of No Violation**
  In this case, the inspection report is filed at the inspectorate that the inspectors follow.

- **In Case of Violations to Laws Other than Law 4/1994**
  In this case, EEAA notifies the CAA responsible for the enforcement of the law in order to take the necessary procedures. The CAA informs EEAA of the taken procedures.

- **In Case of Violations to Law 4/1994**
  Enforcement procedures are applied. They include:
  - Administrative procedures: these are administrative orders issued by the judicial officer, investigating the nature and occurrence of the violation and requiring the establishment to apply corrective actions within a limited period of time.
  - Judicial Procedures: this includes filing a lawsuit.

  The selection of the suitable procedures depends on the significance of impact resulting from the violation as well as its repetitiveness.

3.3.1 In case of First-time Violation

In case a first-time violation is detected, its significance must be identified as judicial procedures are applied in cases of significant violations.

a. In Case of Violations Representing Imminent Danger

In case there is a violation to law 4/1994 and its continuity represents an imminent danger on the public health (should be defined by EEAA), article 101 of law 4/1994 is applied. This article states that the imposition of the penalties stipulated in law 4/1994 is without prejudice to the imposition of any more severe penalty included in another law. Accordingly, the CAA is informed to apply article 17 of law 453/1954 concerned with industrial and commercial establishments. This article states that in case of imminent danger, the competent administrative authority (CAA) applies the legal procedures for shutting down the establishment, where the inspection record is forwarded to the court of summary justice within 24 hours. The judge takes the decision to shutdown the establishment until the violation is rectified. The CAA informs EEAA of the taken actions.

b. If the Violation Could be Rectified Within 60 Days

- In this case, reconciliation could be undertaken for violations specified in the law. In the general case, EEAA Chief Executive Officer (CEO)[14] notifies the CAA to direct the owner of the establishment, through a registered letter, to rectify the violation forthwith. The CAA then informs EEAA with the taken actions.

  The inspectorate integrates the establishment in the follow-up inspection plan to be re-inspected after the legal period, 60 days, from the receipt date of the letter according to article 22 of law 4/1994.

- On the other hand, this does not contradict with the right of judicial officers to notify the public prosecutor that takes the legal actions.

c. If the Violation Needs a Long Time to be Rectified (More than 60 days)

In some cases, the violation needs a long time to be rectified where treatment works are needed such as the treatment of gaseous emissions. In this case, and if the violation is not the source of imminent danger, the establishment could apply to the inspectorate to grant the establishment an appropriate period. The application should be accompanied with the schedule for the required work. The establishment should periodically notify the inspectorate of the work progress.

The facility is re-inspected to check the compliance to the time schedule. In case the establishment does not conform with the grace period to complete the corrective actions, EEAA CEO (or RBO manager) applies the procedures similar to (3.3.4) in case follow-up inspection proves that the violation persists. This procedure allows EEAA to provide the required time for rectification to serious establishments in order to achieve the environmental compliance, which is the main objective of the environmental inspection.

d. Inspection on the Compliance with EIA Approval Conditions

According to law 4/1994, new establishments should prepare environmental impact assessment studies (EIA) as part of the licensing procedures needed for the construction license. The study is reviewed and

[14] The CAA could also be addressed through the RBO manager (CEO decree no 17/2001)

approved while setting some conditions that the establishment should abide with. These conditions are integrated in the licensing conditions. The EIA conditions include measures that should be followed during operation or pollution abatement equipment that should be implemented. The licensing entity ensures the implementation of the conditions before granting the facility the operation license since their implementation is a main condition for granting such license.

After operation starts, environmental inspection is conducted on the establishment. In case violation to EIA conditions is detected during operation, the violation can be considered a violation to law 4/1994 as stated in article 18 of the environmental regulations and thus the procedures of item (3.3.1) could be applied.

Since the violation to these conditions is a violation to licensing conditions, the licensing authority could be notified to temporarily withdraw the license according to articles 7, 16 of law 453/1954 concerning possible withdrawal of the license when the facility violates one of its conditions, which include the conditions of the EIA approval.

3.3.2 In Case of Repeated Violations to Law 4/94

Law 4/94 stipulates that the repletion of the violation entails applying severe penalties.
The law identifies the maximum and minimum penalties whereas the inspectorate is responsible for selecting the suitable one.

3.3.3 Reconciliation Procedures

According to article 18 of the penal law, it is possible to conduct reconciliation in all contraventions and delinquency whose penalties are only fines. This could be applied to the following articles in law 4/1994:

- Article 35 concerned with the ambient air
- Article 37 concerned with burning and disposing of solid wastes
- Article 40 concerned with the specifications for air emissions resulting from fuel burning and specifications of stacks.
- Article 43 concerned noise and emissions specifications in work environment
- Article 44 concerned temperature and humidity specifications in work environment
- Article 45 concerned with ventilation

As shown, the rectification of the violations to these articles does not take a long time and it is possible to apply the reconciliation principle.
In this case the legal procedures are not implemented and the

establishment owner should pay the fine or part of it according to the law, where he pays quarter of the violation within 15 days from the day following the reconciliation agreement and half the fine after 15 days on condition that the violation is rectified (annex B presents a reconciliation certificate). The establishment is then re-inspected within an adequately short period to ensure the rectification of the violation, else the public prosecutor is notified as shown in item (3.3.1). This procedure encourages violating establishments to rectify the violation.

The Minister of Justice had issued a decree that allowed EEAA judicial officers (including RBOs) to collect reconciliation fines in law 4/1994 violations which penalties are only fines (as shown above) and place it in the Environmental Protection Fund.

In case follow-up inspection showed that the violation persists, the public prosecutor is notified to take the legal procedures.

3.3.4 Follow-up Inspection of Law 4/1994 Violation

The facility is re-inspected to investigate and follow-up the rectification of detected violations. Procedures are taken according to the results of the field inspection.

- In case the violation is rectified, the report is filed

- In case the violation persists, the inspectorate notifies EEAA CEO (or RBO manager) who informs the CAA and coordinates with it to take one of the following actions according to article 22 of law 4/1994 and article 18 of the executive regulations:
  - Shutdown the establishment
  - Stop the violating activity
  - File a law suit for compensation

  It is also possible to inform the public prosecutor to take the legal procedures and identify the type of the violation (contraventions, delinquency or felony) and file a law suit in court. The verdict is either imprisonment or fines that are sent to the Environmental Protection fund.

Fig (2) shows a detailed flow diagram for all of the previously discussed procedures.

4. Stages of Environmental Inspection

The inspection process is divided into three stages:
- Pre-inspection stage
- Field inspection stage
- Post inspection stage

The effectiveness of each stage depends on the performance efficiency and co-operation between all involved parties. This chapter presents the procedures implemented by each party during the different stages of inspection.

The pre-inspection stage involves determining the facility to be inspected, forming the inspection team, preparation of the inspection plan and provision of the necessary inspection tools and equipment.

In the field inspection stage, the inspectors investigate the compliance of the establishment with the environmental conditions and specifications in law 4/1994 by inspecting the different production units, utilities, environmental register and hazardous waste register. The inspection team writes the inspection record that documents the procedures of inspection process and the violation proved without the need for laboratory analysis. Additionally, the measurements taken by the inspection team during field inspection is also documented as well as the compilation of facility document logbook.

The post inspection stage involves the preparation of the technical inspection report based on the laboratory results. The inspection team submits the technical report including the laboratory results and the document logbook to the inspectorate. Details of responsibility distribution in the different inspection stages are illustrated below.

4.1 Pre-Inspection Stage

4.1.1 Responsibilities of the Inspectorate

- Provide the necessary data for the inspection team
- Provide the suitable resources and authorities to carry out the inspection procedures
- Provide the necessary measurement equipment and the technical assistance for the inspection team
- Attend some of the inspection team meetings especially in case problems or obstacles.

4.1.2 Responsibilities of the Inspection Team Leader

The inspection team leader carries out the following tasks:
- Provide the necessary information needed for carrying out the inspection activities, acquired from the inspectorate database. Moreover, the team leader organizes the process of data collection and storage.

- Identify the human resources needs and equipment requirement.
- Select the members of the inspection team according to their qualifications and experience
- Participate in the preparation of the establishment inspection plan.
- Contact the different regulating agencies, whether within EEAA including its RBOs or outside it (Ministry of Public Works and Water Resources, etc.) in order to identify the previous violations within the facility in cases the facility was inspected by any of these entities.
- Identify the safety procedures that should be followed during inspection as well as the need for specialized experts.
- Hold a meeting with the inspection team to identify the existing or potential obstacles facing the team in carrying out its tasks, and discuss any comments or suggestions for improving the inspection process.

4.1.3 Tasks of the Team Members

a. Data Collection

The inspectors collect and analyze the preliminary information available about the facility in order to be familiarized with the different industrial processes carried out as well as the potential environmental problems. Annex (C) outlines preliminary information needed about the facility.

b. Preparation of the Documents Used During Inspection

The inspectors prepare the necessary documents for inspection comprising the following:

- Basic information form
- Inspection checklist for the environmental register and the hazardous waste register
- A tailored inspection checklist for the facility (according to the type of inspection)
- Form for the environmental record.

c. Preparation of the Inspection Plan

The inspection team prepares the inspection plan in light of the available information about the facility including the following issues:

- Type and purpose of inspection
- Number of inspectors
- Responsibilities of the different inspection team members taking into account the objectives of the inspection procedures
- Identification of the documents required (a copy of these documents is to be obtained if possible). Annex (D) illustrates the necessary documents.
- Identification of inspection requirements[15] and equipment.
- Determination of the inspection time schedule

[15] Inspection requirements include safety equipment such as safety helmets, glasses, gloves, and other tools such as cameras, measuring equipment, etc.

It should be noted that the inspection plan is considered as an internal classified document (is not to be shared with the establishment). The inspection team leader is entitled to change or modify the inspection plan during the field inspection, if necessary. An example for the inspection plan (comprehensive- periodic) is given in Annex (E).

4.2 The Field Inspection Stage

4.2.1 Tasks of the Inspectorate

- Resolve the obstacles hindering the inspection process
- Cooperate with the inspection team if unexpected incidents occur which affect the inspection process.

4.2.2 Tasks of the Inspection Team Leader and the Team Members

It might be beneficial that the team leader, together with the team members, conduct a quick tour around the facility's outer fences, to detect any observation that might be helpful to the inspection process.

a. The Opening Meeting

- After entering the facility the team leader introduces the team members to the facility representatives. Then, the leader explains the purpose and objectives of the inspection as well as the necessary data and measures required from the establishment to assist the team in inspection activities
- Contact the inspectorate in case any problems arise such as:
  - If the facility restrains the inspection team from entering the facility, or in case of withdrawing the approval during inspection.
  - If the facility restrains the team from taking the needed photos.
- Require the facility to provide the environmental register and the hazardous waste register for inspection at the time set in the inspection plan.
- Discuss the procedure for sampling and identify the sampling location and time, in addition to the necessary arrangements for measurements of the work environment and flue gases from stacks.
- Examine the required documents and obtain a copy if possible (such as lists of raw materials, lists of the chemicals used, flow charts of the production units, facility layout indicating the

drainage network, waste selling contracts). Annex (D) lists these documents.

b. Inspecting Production Units and Utilities

Tasks of the Team Leader

- Distribute the inspection responsibilities between the team members and participate in the inspection process according to the preset inspection plan.
- Supervise the implementation of the inspection plan and modify it if needed. The team leader also coordinates between the team members.
- Ensure the implementation of the different safety precautions and make the safety equipment available for the team members.
- The team leader identifies the location and time for sampling so that the samples are representative.

  Samples and measurements are usually taken in the following cases:
  - As a routine action within the periodic inspection to investigate the facility compliance with the legal limits.
  - When suspecting the soundness of data in the environmental register.
  - To detect essential parameters not included in the environmental register.
  - When investigating complaints

  Annex (F) provides sampling guidelines.

Tasks of the Team Members

They include the following:

- Follow up on the completeness of the environmental register according to the law requirements.
- Compare the data in the register to reality.
- Investigate the facility compliance with the legal requirements through inspecting the following parameters:
  - Gaseous emissions
  - Liquid waste and industrial wastewater
  - Solid waste
  - Hazardous substances and waste
  - Work environment parameters
  - Input materials (the use of fuel oil as fuel in residential areas, using ozone depleting substances, etc.)

Each inspector conducts the inspection according to his responsibilities set in the inspection plan. The inspector records the data in the inspection checklist (Annex F).

> The best person to interview, concerning a specific process is the personnel responsible for it. It is obviously essential to first identify the scope of his responsibilities concerning this process.

The basic communication and interview principles, shown in annex (H), could be taken as a guide. The following instructions could be followed during the field inspection:

- The inspector should take into account the logical flow of the industrial processes in the facility in order to avoid distraction or information deficiency. Therefore, the inspection has to be conducted staring from the first process till the last one successively.

In cases of data deficiency regarding a specific production unit, the inspector should not press to get the information from the same personnel but writes records his observations and tries to get the missing data from other personnel.

Sagacity is considered an important tool that assists the inspector in carrying out his tasks efficiently. For example, a potential violation should be expected in case of the absence of an industrial wastewater treatment plant in polluting industries such as textile industries (possessing dying and printing units), the pulp and paper industry, tanning, chemical industries etc. In such cases, the inspector should take the necessary samples from the end of pipe to check the compliance status.

- A member of the inspection team has to accompany the concerned sampling personnel to ensure the soundness of the sampling procedures such that the evidence are collected in a legal method in case there was a need for litigation. The inspector also should have a simple schematic description or a photo of the sampling location.
- The inspector examines the data of the environmental register according to the inspection checklist, and the hazardous waste register[16] (Annex G) and compares the data to reality. It is preferred that the comparison takes place after inspecting the production unit and taking sufficient notes.
- In case the facility had neither prepared an environmental register nor maintained a list of hazardous materials used within the facility, the inspector requires the lists of all chemicals used in the different processes for examination and identification of the hazardous substances. Accordingly the inspector inspects the availability of handling licenses.
- In case there is no material safety data sheet (MSDS) in the establishment, the inspector could direct the establishment to its

[16] At this the issuance of this manual, the hazardous waste lists have not yet been approved by the concerned authorities.

right for obtaining MSDS from the chemicals suppliers, whether local or international.

During inspection on solid waste generation points, it is beneficial that the inspector advise the establishment to segregate the solid waste at source.

c. Closing Meeting

Tasks of the Inspection Team Leader

- Supervise the numeration of the documents acquired from the establishment after it is stamped with the serial stamp of the establishment. He is also responsible for preparing the documents logbook and registering its contents and signing it by himself as well as the responsible person in the establishment. This logbook is considered as a document that could be used in cases of litigation, thus the preparation of the logbook in an organized and a systematic way will facilitate registering and proving the rights for the disputing entities.
- Supervise the preparation of the inspection record.

Tasks of the Inspectors

- Inquire about the points that were not presented or discussed during the field visit.
- Prepare the documents logbook as described above in the tasks of the team leader.
- Write the inspection record to document the inspection process. The inspection record will include the comments of the inspection team and the violations that were detected during the visit whether detected visually or through measurements. As for the violations that need to be proved through further analyses in the laboratory, they will not be included in the record. The record will also contain the measurements that were taken during the field visit whether its results were immediate, as the noise intensity, or need to be analyzed in the laboratory. The documents logbook will also be registered in the record. This record is signed by the members of the inspection team and the responsible staff in the establishment. (see annex (J) that presents an inspection record model).

The responsible person in the establishment should sign the record, and in case of his refusal it is documented in the record that he refused to sign. It should be noted that the signature of the facility officials on the record strengthens it.

Factory officials should be given the chance to clarify their point of view regarding the inspection observations and proved violations. They are allowed to read the inspection record. However, violations that need to be proved by laboratory analyses are not discussed nor the possible corrective measures.

4.3 Post Field Inspection Stage

4.3.1 Tasks of the Inspectorate

- Receive the inspection reports and identify the enforcement procedures that should be applied.
- Analyze the acquired experience and the results of the inspection to ensure adequate feedback to the inspectors.
- Notify the public prosecutor with the violations and forward a copy of the records and documents of the judicial impoundment so as to classify the violation (felony, delinquency, contravention). The case is then transferred to the concerned court.
- Send a written notification to the CAA (governorates, Ministry of Irrigation, General Organization for Sanitary Drainage, etc.) to implement the enforcement procedures.
- Follow-up on the violating establishments to ensure that they are implementing the necessary corrective actions .In this respect, it should be noted that the inspectorate plays an important role in assisting the establishment towards improving their environmental performance.

The industrial establishments are totally responsible for implementing the necessary corrective actions to rectify the environmental violations within the establishments.

- Following–up on the enforcement procedures. The inspectorate is responsible for the continuous follow-up of the violating establishments. As for the establishments that do not implement corrective actions, EEAA CEO of EEAA or the heads of the RBOs notify the CAA so as to take the following enforcement procedures: stopping violating activity, closing the establishment, claiming adequate compensation.

4.3.2 Tasks of the Inspection Team Leader

- File the information and the documents logbook and the inspection checklist, gathered during the inspection in a file in the environmental inspectorate.
- Participate with the team members in writing the technical inspection report based on the laboratory report. The report should include the following:
  - A general summary description of the establishment and the production processes and the utilities available.
  - Assessment of the compliance of the establishment with the effective environment legislations listed in Annex (L), and an assessment of the extent to which the environmental register describes the actual situation.
  - Efforts exerted by the establishment to comply with the environmental legislations and the initiation of corrective actions such as: issuing bidding documents, preparing technical

drawings, initiation of the civil works, the availability of a time schedule for the removal of the violation.

- Assessment of the inspection team regarding the violations detected in the establishment through analyses and measurements. The article and laws being violated in each violation detected should be stated together with follow-up procedures that should be followed on the establishment including field visits and sample analyses.
- CAA that are responsible for applying the enforcement procedures and thus should be notified. (governorates, Ministry of Irrigation, General Organization for Sanitary Drainage, etc.)

The inspection team cooperates with the team leader in order to finalize the report and raise it to the inspectorate together with the document logbook and laboratory analysis. Annex (K) presents a form of the technical inspection report.

4.3.3 Tasks of the Inspectors

- The inspectors write the technical inspection report based on the laboratory reports including the results of the sample analyses.

All members of the inspection team participate in the technical inspection report, where each inspector is responsible for preparing the part concerned with the components he has inspected within the establishment. The inspector is responsible for stating his observations and the detected violations. He is also responsible for presenting complete evidence and the verification that supports what is stated in the document.

- The inspectors analyze the observations and information gathered during the inspection process. Moreover, they should ensure the accuracy of information.
- Each inspector writes the part that he has inspected including production units, utilities, environmental registers and hazardous waste register. Based on collected information, observations and the laboratory report, the inspectors assess the environmental status of the establishment and identify violations with due reference to the articles of the relevant laws if any.

The inspectors conveys the information of the inspection report into EEAA database.

Annex A

Annex (A) Violations of Industrial Establishments to the Environmental Law and its Penalties[1]

Articles of Law 4/1994	Type of Violation	Penalties
Felonies		
Article 29 and 88	Handling of hazardous substances and wastes without a license from the CAA	Imprisonment from 5 to 15 years and a fine from 20,000 to 40,000 Egyptian pounds
Article 47 and 88	Exceeding the permissible limits for the level of radioactivity or the concentration of radioactive substances in air	Imprisonment from 5 to 15 years and a fine from 20,000 to 40,000 Egyptian pounds
Article 95	Intentional violation to the provisions of law 4/1994 - if results in causing a permanent incurable disability to an individual	Imprisonment for a period of not more than 10 years.
Article 95	- if results in causing this infirmity to three or more persons.	Imprisonment from 3 to 15 years
Article 95	- if results in the death of a person	Temporary hard labor from 3 to 15 years
Articles 95 and 101	- if results in the death of three persons or more.	Permanent hard labor
Delinquencies		
Articles 30 and 85	Violating the rules and procedures concerning the management of hazardous waste, laid down in the executive regulations of the law	Imprisonment for a period of not less than one year and/or fine from 10,000 to 20,000 Egyptian pounds
Articles 31 and 85	Constructing an establishment for the treatment of hazardous waste without a license issued by the CAA	Imprisonment for a period of not less than one year and/or fine from 10,000 to 20,000 Egyptian pounds
Articles 31 and 85	Disposal of hazardous waste in a way that violates the conditions and criteria set in the executive regulations of the law.	Imprisonment for a period of not less than one year and/or fine from 10,000 to 20,000 Egyptian pounds
Articles 33 and 85	Not taking the required precautions to ensure that no environmental damage shall occur during the production or handling of hazardous materials either in gas, liquid or solid form.	Imprisonment for a period of not less than one year and/or fine from 10,000 to 20,000 Egyptian pounds
Articles 33 and 85	The owner of an establishment whose activities produce hazardous waste is not keeping a register of such waste indicating the method of disposing thereof and the agencies contracted to receive the hazardous waste.	Imprisonment for a period of not less than one year and/or fine from 10,000 to 20,000 Egyptian pounds
Articles 36 and 86	Using machines, engines or vehicles whose exhaust emissions exceed the limits set by the executive regulations of the law.	A fine from 200 to 300 Egyptian pounds , with the possibility of the suspension of the license for a period of not less than one week and not more than six months, and in case of recidivism the license may be revoked

[4] Manual of Crimes stipulated in Law 4/1994, 1998

Articles of Law 4/1994	Type of Violation	Penalties
Articles 41, 87	Non compliance of the organizations undertaking activities in the field of exploration, drilling, extraction and production of crude oil and its refining an d processing , with the regulations and procedures set forth in the law and its executive regulations. (article 43 of the executive regulations sets the regulations and procedures that should be complied with)	A fine from 200 to 200,000 Egyptian pounds. In case of recidivism, imprisonment together with the above mentioned fine.
Articles 35, 87	Exceeding the maximum permissible levels, for emissions or leakages of air pollutants, as permitted by laws and decrees in force and determined in the executive regulations of the law. (article 36 of the executive regulations and annex (6) set the permissible limits of air pollutants in emissions and the maximum limits of gas and fume emissions from industrial establishments)	A fine from 1,000 to 20,000 Egyptian pounds ((in case of recidivism, the penalty shall be imprisonment together with the fine)
Articles 46 and 87	The manager in charge of the establishment did not take adequate measures to prevent smoking in closed public places.	A fine from 1,000 to 20,000 Egyptian pounds ((in case of recidivism, the penalty shall be imprisonment together with the fine)
Articles 40 and 87.	Not taking the precautions necessary to minimize the pollutants in the combustion products in order to meet the permissible limits for harmful smoke, gases and vapors resulting from the combustion process.	A fine from 1,000 to 20,000 Egyptian pounds (in case of recidivism, the penalty shall be imprisonment together with the fine)
Articles 42 and 87	Exceeding the permissible noise intensity level (article 44 of the executive regulations and annex (7) sets the permissible limits of sound intensity and periods of safe exposure thereto)	A fine from 100 to 500 Egyptian pounds (the machines and equipment used in the violation shall be confiscated) in case of recidivism, the penalty shall be imprisonment together with the fine)
Articles 43 and 87	The owner of an establishment did not - take all precautions and procedures necessary to prevent the leakage or emission of air pollutants inside the work premises to meet the permissible limits defined in the executive regulations. - provide the necessary protective measures for workers in accordance with the conditions of occupational safety and health - ensure the adequate ventilation and installing chimneys and other air purification devices. (article 45 of the executive regulations and annex (8)	A fine from 1,000 to 20,000 Egyptian pounds ((in case of recidivism, the penalty shall be imprisonment together with the fine)
Articles 44 and 87	The owner of an establishment did not: - take the necessary procedures to maintain temperature and humidity in-side the workplace within the permissible limits. - secure appropriate protective measures for workers	A fine from 1,000 to 20,000 Egyptian pounds ((in case of recidivism, the penalty shall be imprisonment together with the fine)

Articles of Law 4/1994	Type of Violation	Penalties
	(article 46 of the executive regulations and annex (9) sets the upper and lower limits for decrees of temperature and humidity, the period of exposure thereto and the means of protection therefrom.)	
Articles 89 of law 4/1994 (reference to articles 2 and 3 of law 48/1982)	Discharging or disposing of solid or liquid or gaseous wastes in watercourses without a license	A fine of 200 to 20,000 Egyptian pounds. In case of recidivism, the penalty shall be both imprisonment and the fine. In all cases, the violator shall be held to remove or rectify the violating works by the date determined by the ministry of public works and water resources.
Article 89 of law 4/1994 (reference to article 4 law 48/82)	Discharging treated liquid wastes, not meeting the standards and specifications, to watercourses after notifying the owner of the establishment of removing pollutants.	
Articles 69 and 87	Discharging untreated substances, wastes and liquids which may cause pollution along the Egyptian sea shores or adjoining waters either directly or indirectly, intentionally or unintentionally.	A fine from 200 to 20,000 Egyptian pounds and incase of recidivism, the penalty shall be both imprisonment and the fine. Each day of such prohibited discharge is considered as a separate violation
Articles 37 and 87	Throwing, treating or burning garbage and solid waste in sites other than the ones designated for such purposes which are far from residential, industrial or agricultural areas as well as from water ways. (article 38 and 39 of the executive regulations sets the specifications for throwing , treating and burning solid wastes)	A fine from 1000 to 20,000 Egyptian pounds. In case of recidivism, the penalty shall be imprisonment together with the fine.
Articles 39 and 86	Not taking the necessary precautions to secure the safe storage or transportation of waste or debris resulting from construction and demolition works within the establishment (article 41 from the executive regulations states the necessary precautions that should be considered.	A fine of 500 to 1,000 Egyptian pounds with the possibility of suspending the license for a period of not less than one week and not more than six months, and in case of recidivism the license may be revoked.

Annex B

Annex (B)

Forms of Environmental Inspection Activities

Form no: ----------
Subject: Filing decision (according to law 4/1994)
Date: ------/---------/---------

Decision of the inspection team regarding: ----------
Facility: ----------
Address: ----------
Chairman: ---------- Responsible manager: ----------

After examining the inspection record dated (------/------/-----), the inspection team decided

Letter Forwarding the Inspection Record and Report to the Public Prosecutor

Form no: ----------

Subject : Memorandum regarding forwarding the record and the technical report to the Public Prosecution
Date : / /

Mr./ Police Commissioner----------

Dear Sirs,

Presented to you is the environmental inspection record dated ----/----/------, prepared by the inspection team possessing the judicial impoundment, to take the necessary legal actions.

Against

Establishment:----------
Location:----------
Markaz/District----------
Owner/Chairman----------
Responsible Manager----------

It has been clear that the establishment is violating Law 4/1994 for environmental protection according to the following[1]:

---

[1] State the number of article violated and describe the violation clearly and refer to the attachment supporting the identification of the violation

---
---

where the penalty for violating these standards are outlined in articles ----------- of Law 4/1994 and articles ----,----,---- of Law number -------/-------

This does not contradict with the right of the governorate (Markaz) to claim the appropriate compensation for removing the causes of the damage in coordination with different concerned entities to take procedures for closing down the establishment and suspending the violating activity according to article 18 of the executive regulations of law 4/1994, without detriment to any other more stringent penalty stipulated by the Law. Attached to the record is the technical report including the analyses results and the violations.

Signature

Attachments: -------- pages, according to the following:

	No.	
1-	Inspection record dated / /	----------
	pages	
2-	Technical report	----------
	pages	
3-	Analyses Results	----------
	pages	

Form no: ----------
Subject: Reconciliation Certificate
Date: -------/-------/------

After consulting Law 4/1994 and other laws and regulations as well as the penal law and the decree of the Minister of Justice regarding reconciliation in environmental violations. The following establishment ---------- has requested reconciliation concerning the inspection record prepared in -------/---------/-------- and has paid 1/4 of the fine according to article 18 of the penal law and that facility will be ready to be reinspected to investigate whether the facility has complied with laws and regulations and has rectified the violations that were indicated in the inspection record.

Accordingly,

The inspectorate has approved the reconciliation with the facility ----------and its directing manager (title/name)---------- after paying 1/4 the fine and the reconciliation fees were forwarded to the Environmental Protection Fund by means of a coupon no -------. This certificate is given to the facility so that article 18 of law 4/1994 is not applied.

Signature

Form no: ----------

Subject: Notification of Violations
Date: -------/-------/------

Facility: ----------
Address: ----------

According to the provisions of law 4/1994 and its executive regulations for the protection of the environment, the inspection team has inspected the facility and has prepared the inspection record dated -----/------/------ and prepared the inspection report including the results of the analysis.

Findings have shown that the facility, headed by (title/name, position) ----------violates the provision of law 4/1994 according to the following:

1- Violation to article no[2]: ----------
2- Violation to article no: ----------
3- Violation to article no: ----------
4- Violation to article no: ----------

This is to inform you that article 18 of the penal law allows the reconciliation of violations in contraventions and delinquencies whose penalties are only fines. In such cases, reconciliation is possible after paying 1/4 of the fine within 15 days from the day following the reconciliation agreement and 1/2 of the fine after another 15 days both on condition that the violation is rectified within this period. Follow-up inspection will be conducted to make sure that the facility has rectified the violation.

Looking forward for your cooperation.

Signature

---

[2] State the number of the violated article and describe the violation clearly

Form no: ----------
Subject: Notification of Violation
Date: -------/-------/------

According to the provisions of law 4/1994 and its executive regulations for the protection of the environment, the inspection team has prepared the inspection report containing its decision, shown in the following:

Facility	**Date of Inspection**	**Violations**

We, hereby, request you to rapidly rectify the violations within --------- days. Follow-up inspection will be undertaken to ensure the rectification of the violations.

Looking forward to your cooperation.

Signature

Annex C

Annex (C)
Data that Should be Available
(In Case of Comprehensive/ Periodic Inspection)

A part of the data is acquired from the Industrial Pollution Information System (IPIS) in EEAA, while the remaining data is collected by the inspection team during the inspection, with the purpose of knowing the industrial activity of the facility and the emissions and pollutants generated from it and the means for its control and treat emissions and pollutants.

1- General Information on the Facility

This information includes fixed data on the facility covering long periods of time. Such data is obtained through the IPIS and includes the following:-

1-1 General description of the industrial facility

Name and address of the facility, nature of production, number of workers, annual operation time, seasonal changes, number of operational days per week, number of daily shifts.

1-2 Inputs and outputs

Includes information on main and secondary raw materials and hazardous substances used in the production processes, as well as the types and quantities of the main, secondary and intermediate products.

1-3 Description of the production processes and the flow diagrams for such processes

The production units and the processes carried out in each unit should be described in details and illustrative flow diagrams should be made available.

1-4 Data on the utilities within the facility

Includes information on the types and numbers of the utilities available within the facility. Example: boilers, electricity generators, storage areas, cooling towers, compressors, water treatment unit, industrial wastewater treatment unit, etc…

1-5 Any information concerning previous violations by the establishment recorded by other environmental inspection entities (example: Ministry of Irrigation, Organization of Sanitary Drainage, Ministry of Manpower)

1-6 Sources of Pollution in the Facility

Includes locations of the generated gas, liquid and solid pollutants within the facility, and the resulting pollution indicators (if available within the information system in EEAA).

2- Changing Information

This type of data includes the data that could change during different time periods, and is obtained during the periodic inspection of the establishment. It includes the following:

2-1 Production changes

Includes the changes in the production processes or the raw materials or the expansion of the facility.

2-2 Sources and types of pollution within a facility

Includes data concerning the amount and the method of disposal of generated industrial wastewater, sources and indicators of gaseous emissions, work environment pollutants, hazardous substances and waste, and the identification of sampling points.

Annex D

Annex (D)
Documents and Records that need to be Checked During the Inspection (Comprehensive/ Periodic Inspection)

1- During the opening meeting the team leader request for following documents, to check and take a copy of it (if possible):

a- In case of the comprehensive inspection:

- Map of the facility indicating the sewer is for the first time network and the final outlets for discharge, the stacks, surrounding establishments, and surrounding drainage, canals and rivers.
- List of raw materials and chemicals used in the facility.
- Selling contracts for waste, for example solid waste and oil and grease.
- Previous analyses and measurements for wastewater, gaseous emissions or work environment.
- License for ww discharge and license for handling hazardous substances.
- Previous penalties and violations of the facility.

b- In case of periodic inspection:

In case of periodic inspection, the inspectors could discover that the data in the documents listed above has been changed or updated, for example when the facility construct a new production unit (this would lead to modifications in the facility map) or the use of new raw materials or conducting new analyses and measurements for emissions, etc… In such case the inspector should request an updated version of the documents.

A documents logbook is prepared during the closing meeting to be registered in the inspection record.

1- **Registers that should be reviewed during the inspection (comprehensive/periodic):**

- Environmental Register for the Facility
- Hazardous Waste Register

Annex (G)
Monitoring Form for Data of the Environmental Register and the Hazardous Waste Register

According to Article 22 and 33 of Law 4/1994, the industrial facility should prepare an environmental register and a hazardous waste register for hazardous waste being generated from its activities. Both registers should be prepared according to the forms illustrated in Annex (3) and articles 17 and 33 of the executive regulations of Law 4.

In order for the environmental inspectors to hollow-upon one of the environmental performance aspects of the industrial facility, article 18 and 33 of the executive regulations of the environmental law stipulated the authorities of EEAA inspectors to periodically (every year) follow–up on the data recorded in the registers to ensure its corr. to the actual situation, taking the needed samples and carrying out the necessary tests to investigate the impact of the facility activity on the environment, to identify the of compliance staties of the facility with the standards set for environmental protection, and in raising a subating to be filed in the concerned sector within EEAA, and the report should be signed by the person responsible for monitoring and testing.

This form has been prepare to enable the environmental inspectors to inspect the data recorded in the two registers, in case of the their availability in the industrial facility being inspected. This is carried out through checking the fulfillment of the data in the two registers. Some of the industrial facilities combine the two registers into one register, while others separate them in two different registers. In such case, the inspector checks the data of the hazardous waste register in the part of the hazardous waste in this form. This form assists the environmental inspector, in addition to the data that has been gathered in the inspection form, in preparing the inspection report to clarify the environmental performance of the facility being inspected and forwarding this report to the concerned sector within EEAA to take the necessary actions.

Instructions for Industrial Facility Periodic Inspection Form

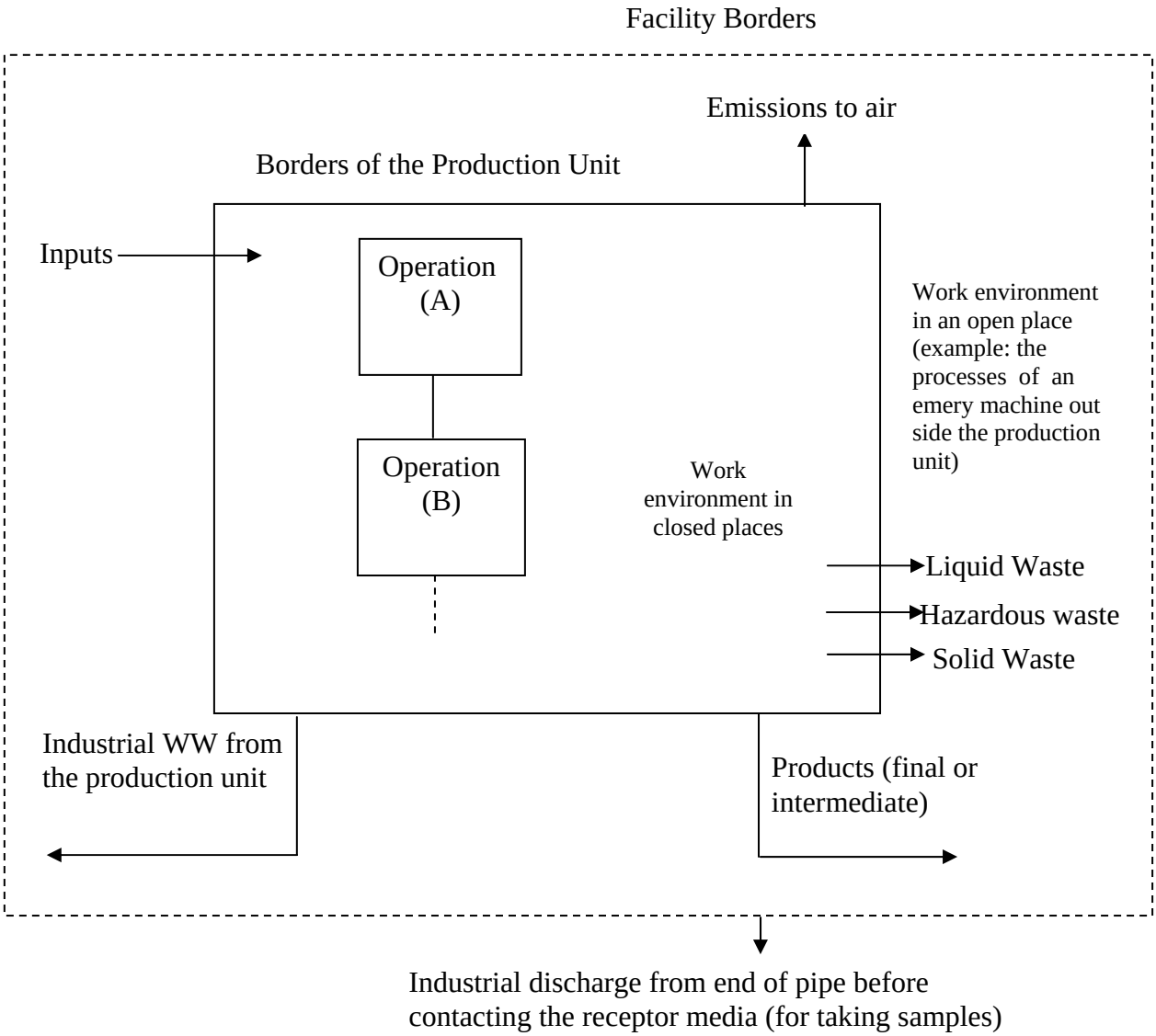
This form has been developed to be used in periodic environmental inspection on industrial facilities, through a field visit to the production units and utilities within industrial facilities. In the field visit inspectors an required to use their will senses to observe and form a general impression on the facility. This would not be an evident to violations. The field visit will also include filling in the data of this form and taking copies of the needed documents and preparing the documents logbook and writing the inspection record.

The objective is to :

- Conduct a walkthrough inspection on the facility without breaching the different axis of the inspection.
- Identify any modifications that occurred in the facility when inspecting it.
- Identify the locations and timing of taking samples to ensure highly efficient inspection.

Instructions for filling in the form

1- Production Units



2- Service Units (Utilities)

- When inspecting the utilities there might be a need to take measurements and gather some data.
- The storage areas is not included in the utilities table in this form, however it should be inspected to check for liquid spills, or rejected raw materials or products that form an environmental burden on the facility to dispose it off, or the presence of hazardous substances stored in an unsafe manner and contain no warning labels.
- Gases could be emitted in the laboratory, therefore the inspectors should investigate such incidents and ensure the availability of the necessary precautions to deal with the emitted gases, for example the presence of a gas suction system or any other system.
- If there is an electricity generator in the facility, the inspector should inspect the number of times that it operates and the type of fuel used in operating it.

3- Documents that should be checked and photocopied if possible (to be requested from the environmental officer in the facility)

- Attach a list of the raw materials and chemicals used and the products of the facility.
- Attach a map of the facility or a ??? drawing where the following is illustrated:

  Production units[*]- Utilities[**]- Facility WW network- Final outlets for WW discharge – Stacks – Surrounding facilities – Surrounding drain, canals and rivers.

[*] The production unit is any unit that produces final or intermediate product. It is composed of a number of operations, for example the unit for producing pasteurized milk is a production unit, the chamber for producing carbon dioxide in the carbonated soft drinks facilities is also considered in the production unit.

[**] The utilities include the following: workshops, stacks, garages, cooling towers, compressors, raw water treatment plant, laboratories, storage areas, electricity generating plant.

Annex E

Annex (E)
Example of an Inspection Plan (Comprehensive/Periodic) for a Large Industrial Facility
Company ---------- Factory---------- Governorate----------
Type of Inspection: ---------- Objective of Inspection: ----------

The number of the inspection team: 3 inspectors + 1 laboratory specialist (Team Leader[1] [L], Inspector [I_1], Inspector [I_2], Laboratory Specialist [S]
Tools and equipment needed for inspection[2]:----------

Tasks	The Inspector in Charge of the Task	The Time Duration for Completion of the Task	Procedures Progress
1- Holding an opening meeting with the concerned personnel in the facility and informing them of the needed personnel to accompany the inspection team during the inspection and the documents[3] needed to be checked and photocopied, as well as requesting the preparation of the locations for taking samples and measurements (septic tanks at sewage outlets, stack opening).	Inspection Team	Approximately 15 min.	It is preferred that the team leader (L) lead the conversation during the meeting as a representative of the team.
2- Field inspection on the production processes and the pollution sources and	Team Leader (L) Inspector (I_1)	Approximately (2-3) hours (according to the size of	During the inspection the Team Leader (L) asks the inter view questions and the

[1] The team leader could be selected based on his experience with the industry to be inspected or the facility itself or for his leading character.
[2] The inspection tools and equipment are the equipment needed for the protection and safety of the inspectors, the equipments for measurements and taking of samples, inspection checklists , etc…
[3] The documents that need to be checked are: map of the facility where the sewage network and its outlets are located, lists of the raw materials and chemicals used- contracts for selling the waste, etc….

emissions and the identification of samples and measurements points and the most suitable timing for taking them.		the facility)	inspector (I_1) fills in the inspection checklist for the production processes.
3- Field inspection on the facility utilities.	Inspector (I_2)	Approximately (1- 1 1/2) hours	During the inspection, Inspector (I_2) fills in the inspection checklist for the utilities.
4- Inspecting the environmental register and the hazardous waste register.	Inspector (I_1)	Approximately (1- 1 1/2) hours	The Inspector (I_1) receives the inspection checklists for the utilities from Inspector (I_2) and inspects the environmental register and the hazardous waste register
5- Taking samples and conducting measurements (industrial discharge, gaseous emissions)	Inspector (I2) Laboratory Specialist (S)	Approximately (2-3) hours according to the number of outlets and the locations of the measurements	(after approximately 2 hours from the beginning of the inspection) The Team Leader (L) informs the Inspector (I_2) and the Laboratory Specialist (S) of the location and timing for taking samples and measurements such that that are representative[4] of the operations conditions.
6- Closing meeting to collect documents, prepare the documents logbook and follow-up on the procedures for taking samples as well as write the inspection record.	Team Member	Approximately 45 min.	Before the closing meeting with the officials, facility, the inspection team meets (for approximately 15 min.) to compile and discuss their observations. The Team Leader (L) writes down the inspection record and Inspector (I_1) prepare the documents logbook. Inspector (I_2) follow-up on the procedures of taking the samples and the data scribed on the samples

[4] In order to take into consideration that all the units within the facilities are in operation at the time of taking the samples.

Time Schedule* for the Plan Inspection
(Comprehensive/Periodic)

Task	The Inspector in Charge of the Task	The Time Duration for Completion of the Task**									
1- Field inspection on the production units	L, I_1										
2- Field inspection on the Utilities	I_2										
3- Inspection on the environmental register and the hazardous waste register	I_1										
4- Taking samples and Measurements (industrial WW-gaseous emissions)	I_2, S										
5- Prepare documents logbook	I_1										
6- Writing the inspection record	L										

* Time is calculated after the opening meeting and the beginning of the field inspection.
** The unit time is half an hour (with a total of approximately 5 working hours).

Annex (F)

Periodic Inspection Form for an Industrial Facility

Instructions for Using Inspection Checklists

The following checklist is used for multimedia comprehensive inspection of industrial facilities. The objectives for inspection are:

- Check the compliance of the facility with environmental laws and EIA requirements
- Identify any modifications (upgrading, extension, and closing down) performed since last inspection
- Identify sampling locations and timing to ensure efficient inspection.

The checklist consists of three parts

1- Basic Data Sheet

This form is used for collecting general information about the facility to feed the data base of EEAA central unit and other environmental inspectorates. This form is filled on the first visit to the facility and updated by subsequent visits.
The form includes general data about the facility, surrounding area, fuel and energy consumption, sewer maps and plot plans for the facility

2- Inspection Checklist for Hazardous Materials and Wastes

The checklist is mainly an inventory of hazardous materials used/produced by the facility and the hazardous wastes generated. It is used to evaluate compliance with environmental law 4/1994 and its executive regulations as well as relevant MSDS (Material Safety Data Sheet) with regard to handling and storage requirements for hazardous materials.
Hazardous waste treatment and disposal methods are also checked as well as relevant licenses.

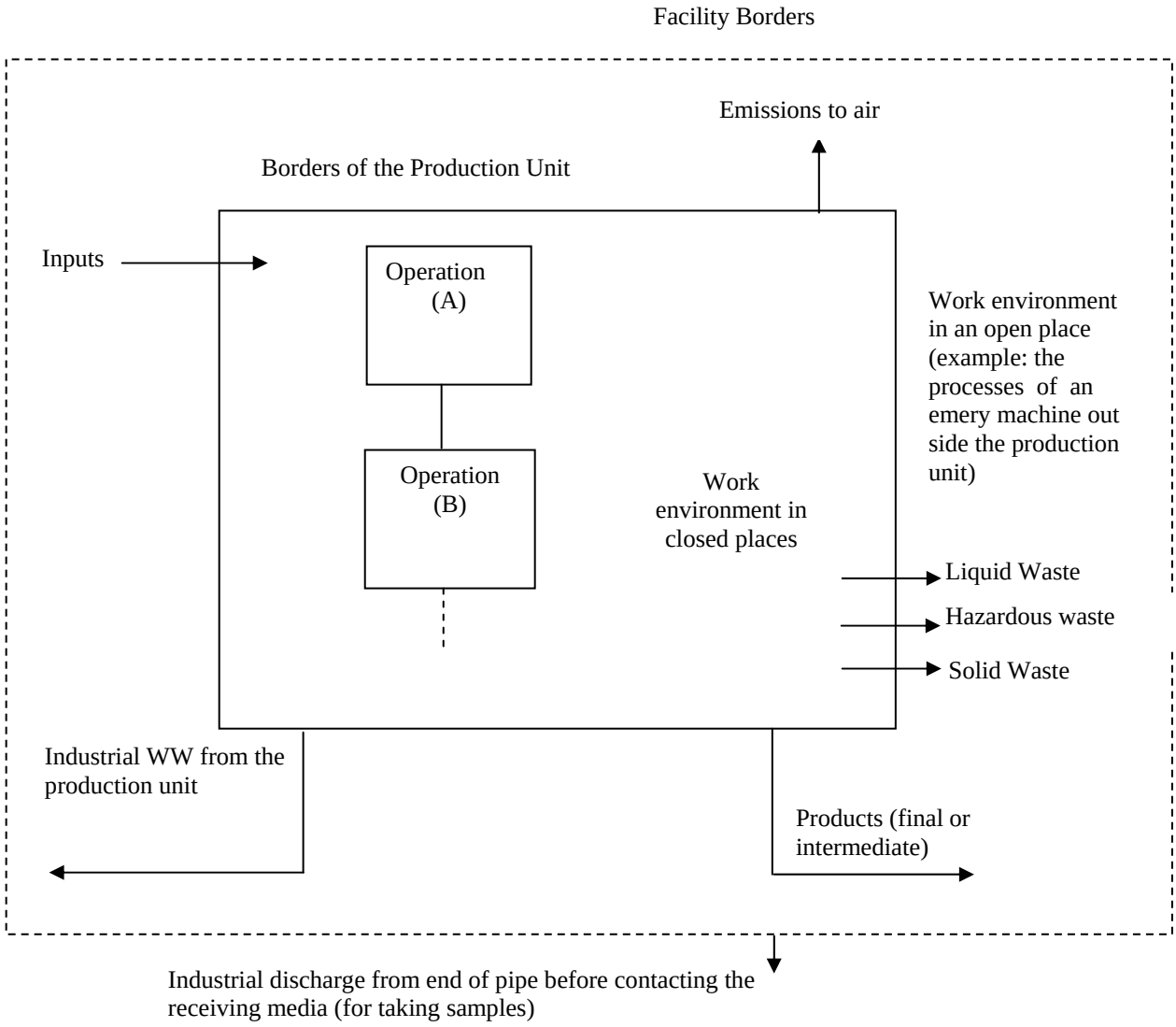
3- Inspection Checklist for Production Lines and Service Units

The checklist is used for the periodic inspection of the facility. The collected data is also used to update the basic data sheet. In the field visit, inspectors are required to use their senses to observe and get a general impression about the facility. The inspector should check whether the readings and analysis results presented in the environmental register are consistent with observations. In case of doubt, he/she should perform his/her own analysis. The inspector should check the compliance with limits set by law and regulations and prepare the inspection record.

This checklist consists of two parts: the first one is for the production units [(1)] and the second for the service units [(2)] .

[1)] The production unit is any unit that produces final or intermediate product. It is composed of a number of operations, for example the unit for producing pasteurized milk is a production unit, the

- **Production Units**
  The inspector is required to create a process flow diagram for every production unit in the facility illustrating the inputs, outputs and sources of pollution for every operation. This diagram represents the basis for developing inspection checklists



chamber for producing carbon dioxide in the carbonated soft drinks facilities is also considered in the production unit.

[2)] The utilities include the following: workshops, stacks, garage, cooling towers, compressors, raw water treatment plant, laboratories, storage areas, electricity generating plant.

- **Service Units**

  - When inspecting the service units there might be a need to take measurements and gather some data.
  - The checklist for storage areas are not included, however they should be inspected to check for liquid spills, or rejected raw materials and products that constitute solid waste that need disposal. The safe storage of hazardous materials and wastes is also checked as well as proper labeling of containers
  - Gases could be emitted in the laboratory; therefore inspectors should investigate such incidents and ensure implementation of necessary measures to minimize harmful impacts (e.g. gas suction system)
  - Electricity generators should be checked for the duration of operation, and the type of fuel used.
  - Workshops differ according to industry type. Workshops for carpentry, electrical and mechanical maintenance are the most common types. However, surface finishing (galvanizing, paint,…etc.) can also be found, therefore, checklists should be developed for each type following the same procedures as for production lines.

Annex (F-1)

Basic Data Sheet

(To be fed to the database of the inspection units)

Ministry of State for Environmental Affairs
Egyptian Environmental Affairs Agency
Basic Data Sheet

Date of visit:……. Visit number:…….

Facility name:……

Commercial name:…….

Licensed Activity:……... Days off:……

Legal status:……

Address of facility

Area of facility:…… Governorate:…….

City:…… Zone:…….

Phone no. :…… Fax no.:…….

……... …….

Year of operation :…….. Postal code:……

The Facility Representative:……..

Environmental management representative:…….

Chairman/Owner:……

Address of Administration

e-mail:……..

Phone no. :…… Fax no.:…….

……... …….

The industrial sector:……

No. of male employees: …… No. of female employees:……

Do they work in production …….

Total no. of employees: …….

Number of shifts/day:…….……shifts/day

Duration of shift:…….…hrs/shift

Environmental register:…….. Hazardous waste register:…….

EIA:…….. Self monitoring:…….

Nature of Surrounding Environment

Industrial ❑	Coastal ❑	Coastal/ Residential ❑
Industrial/ Residential ❑	Residential ❑	Agricultural ❑
Agricultural/ Industrial ❑	Agricultural/ Residential ❑	Desert ❑

Ministry of State for Environmental Affairs
Egyptian Environmental Affairs Agency
Basic Data Sheet

Power Consumption

Electricity ❑ Fuel ❑

Electric power: ……...kWh/(day-month-year)

Type of fuel	Fuel consumption	
Mazot	…….	Ton/(day-month-year)
Solar	…….	Ton/(day-month-year)
Natural gas	…….	Ton/(day-month-year)
Butagas	…….	Ton/(day-month-year)
Other ….	…….	Ton/(day-month-year)

The GPS (Global Positioning System) reading for Gaseous Emissions

1- LAT(Latitude):..……. LONG(Longitude):…….
2- LAT(Latitude):…… LONG(Longitude):…….
3- LAT(Latitude):…… LONG(Longitude):…….

Production

Product	Quantity/ (day-month-year)
……	……
……	……
……	……
……	……
……	……
……	……
……	……
……	……
……	……
……	……
……	……

Water Supply

Artesian well ❑ Municipal water ❑ Treated water ❑ Nile water ❑

Canal water ❑ Other…….. ❑

Ministry of State for Environmental Affairs
Egyptian Environmental Affairs Agency
Basic Data Sheet

Water Consumption

Amount of water consumed in operation (day-month-year):

Process ……..m^3/ Boilers……..m^3/

Domestic usage……....m^3/ Cooling……....m^3/

Other…….. …….m^3 /

Total amount of water consumed (day-month-year)…… ……..m^3/

Type of waste water:
Industrial ❑ Domestic ❑ Mixed ❑

Wastewater Treatment:
Treated ❑ Untreated ❑

Type of Treatment:
Septic tanks ❑ pH adjustment ❑ Biological treatment ❑
Chemical treatment ❑ Tertiary treatment ❑

Amount of treated water/ (day-month-year)……..m^3 /
Amount of waste water/(day-month-year)…….m^3 /

Final wastewater receiving body:
Nile ❑ Lakes (fresh water) ❑ Drain ❑
Groundwater ❑ Public sewer system ❑ Canals❑
Agricultural Land ❑ Desert Land ❑ Other……❑

The Global Positioning System(GPS) reading for final disposal
1-LAT(Latitude):……. LONG(Longitude):…….
2-LAT(Latitude):……. LONG(Longitude):…….

Engineering Drawings for the Facility
Gaseous emissions map Yes ❑ No ❑

Sewer map: Domestic ❑
Industrial ❑
Mixed ❑
Factory Layout ❑
Production process flow diagram ❑

Ministry of Environmental Affairs-EEAA
30 Misr Helwan Agricultural road - Maadi- Cairo 11728
Tel. (02)5256452-(02)5256453 Ext.8849 Fax(02)5256490

Raw material consumption

No.	Trade name	Scientific name	CAS no.	UN no.	Physical state	Type of container	Amount	Classification	
								Hazardous	Non-Hazardous

Inspection Team Member:

Team member	Position

Date: Inspector signature:

Annex (F-2)

Inspection Checklist for Hazardous Materials and Wastes

Annex (F-2)
Inspection checklists for hazardous materials and wastes for a facility

1. Hazardous materials (to be filled in case the facility uses hazardous materials) (1)

Fill the following table according to the codes below

Hazardous material	Amount (unit)	Field of utilization	Storage method(2)	Method of disposal of the containers	Conformity of containers to specifications(3)	Presence of MSDS(4)

(1) To be filled from the list of used raw material and chemicals according to the hazardous material list issued by the Ministry of Industry, checking the presence of a valid license for handling

(2) According to law 4/1994, does the storage area have:
S_1: alarm, precaution and fire fighting system? S_2: first aid procedures?

(3) Check containers' compliance with law4/1994:
C_1: sealed and don't cause any threats while handling C_2: unaffected with along storing period
C_3: labeled with hazard and toxicity signs C_4: labeled in Arabic (production, origin, utilization instruction)
C_5: labeled with its content, the effective substance and its concentration

(4) Material safety data sheet

2. Hazardous wastes (to be filled in case the facility generates hazardous wastes)[1]

Fill the following table according to the codes below

Hazardous waste	Source Of generation	Amount generated /year	Storing method			On-site treatment and disposal			Transportation method	Presence of documents indicating off-site disposal[6]
			Method of storage inside the facility	Compliance of containers' specifications and labels with law 4/1994[2]	Compliance of storage areas with law 4/1994[3]	Treatment[4]	Final disposal[5]	Compliance of treatment and disposal with law 4/1994		

[1] Hazardous wastes can be identified according to law 4/1994 and by using the hazardous wastes list of the Ministerial decree no.65 for 2002 as refrence

Is there a hazardous wastes register? Yes ❑ No ❑

[2]Does the facility take into consideration that the storage containers should be:
C_1: with sealed covers to protect the container from rain water and dust and to prevent any wastes leakage during storage and/or transportation
C_2: constructed or lined by impermeable material which doesn't react with the contained material
C_3: of suitable capacity C_4: labeled

[3] Specification of storage area: determining specified locations for storage of hazardous wastes where safety conditions are set up to prevent the occurrence of any harm to the public or to those persons exposed to the wastes

[4] Which of the following methods are used by the facility for the treatment of hazardous wastes?
N_1: biodegradation N_2: incineration N_3: physical or chemical treatment

[5] Which of the following methods are used by the facility for the hazardous wastes final disposal?
F_1: land filling in specially engineered landfill F_3: other (specify)…….

[6] Contracts with wastes' contractors and receipts.

Annex (F-3)

Inspection Checklist for Production Lines and Service Units

Production line no. (----)

The following generic checklist needs to be developed into a checklist for the specific production line according to the process flow diagram created by inspector as illustrated in the instructions.

1. General	
1.1 Housekeeping status Presence of penetrating odors Status of internal drain system Accumulation of solid waste Status of effluents	 ---------- ---------- ---------- ---------- ----------
1.2 Type of operation	❑ Batch ❑ Continuous
2. Status of Ambient Air	
Sources of flue gas emissions	
2.1 Type of fuel used.	❑ Mazot ❑ Solar ❑Natural Gas ❑ Other …
2.2 Identify the stacks numbers and heights	----------
2.3 Check for control equipment for stack emissions	---------- ----------
Other sources of emissions	
2.4 Identify the sources of emission	----------
2.5 Identify the types of emissions (e.g. particulates generated from milling industry)	---------- ----------
2.6 Identify pollution abatement equipment	----------
Note: - *Refer to law 4/1994 and its executive regulations Annex (6) regarding the gaseous emissions to ambient air* - *Check the readings recorded by the facility, in case of doubt perform your own analysis*	
3. Status of the Work Environment	
3.1 Identify the work environment pollution parameters and their locations in the unit - noise - heat stress - emissions	 ---------- ---------- ----------
3.2 Check the presence of personal protective equipment available at the unit?	❑ Yes ❑ No
3.3 Check for the presence of efficient ventilation system	---------- ----------
***Note** : Check the pollution parameters measurements, in case of suspicious perform your own measurements*	
4 Status of Effluents	
4.1 Identify the sources of wastewater	❑ washing tanks and lines ❑ rinsing equipment ❑ cooling ❑ other…….
4.2 Type of discharge	❑ Batch ❑ Continuous
4.3 In case of sudden discharge, register the time of discharge	---------- ----------
4.4 Identify the types and amounts of spent oils	---------- ----------
4.5 What are the methods of disposal for liquid waste other than wastewater	---------- ----------

5 Status of solid wastes	
5.1 Identity the types and amounts of solid wastes generated from the unit	---------- ----------
5.2 What are the disposal methods for sold wastes	---------- ----------
5.3 Check the relevant documents and receipts for disposal	---------- ----------

Checklist for Boilers and Water Treatment Units

1. General	
1.1 Number of boilers and capacity	---------- ----------
1.2 What is the method used for water treatment?	❑ Lime ❑ Ion exchange ❑ Reverse osmosis
2. Status of Air Pollution	
2.1 What is the height of the stack of each boiler	Boiler (--)---------- Boiler (--)---------- Boiler (--)----------
***Note**: the height of the stack must be 2.5 times the height of adjacent buildings.*	
2.2 Type of fuel used for boilers	❑ Mazout ❑ Solar ❑ Natural gas ❑ Other…….
2.3 In case of using mazot for boilers, is the surrounding area residential?	❑ Yes ❑ No
***Note**: The use of mazot as fuel in the residential area is Prohibited by law.*	
2.4 If mazot is used in non residential area, are there analysis of the flue gases for sulfur dioxide, carbon monoxide, and particulate matter	❑ Yes ❑ No
2.5 If Yes Check the compliance of the analysis readings in the register with your observations	---------- ---------- ----------
***Note** : Whatever the fuel used ,if you notice any smoke, take a sample for analysis*	
3. Status of Work Environment	
3.1 Check the heat stress next to the boilers	----------
3.2 Check the noise next to the boilers and duration of exposure	---------- ----------
3.3 Are they included in the environmental register?	❑ Yes ❑ No
***Note** : In case of suspicious perform your own measurements*	
4. Status of Effluent	
4.1 What is the blow down rate from the boilers?	---------- m^3/d
4.2 What are the blow down and back wash rates for the treatment units?	---------- m^3/d ---------- m^3/d
4.3 Steam condensate is	❑ Recycled to the boilers ❑ Discharged to sewer
5. Status of solid waste	
5.1 If lime method is used, sludge is generated, what is the amount of sludge produced per day?	---------- ----------
5.2 What is the sludge disposal method?	----------
6. Status of Hazardous Material	
6.1 Check the storage method of chemicals used in the treatment process. Is it in compliance with law 4?	---------- ---------- ❑ Yes ❑ No
6.2 Is there any fuel leaks from fuel tanks	❑ Yes ❑ No
6.3 Is there any fire extinguishing devices and fire fighting measures?	❑ Yes ❑ No
6.4 Is there a spill prevention plan?	❑ Yes ❑ No
6.5 Do you notice anything that can provoke a fire? Such as the presence of a pump underneath the fuel tank (the start-up of the engine can produce a spark)	❑ Yes ❑ No Comment ---------- ----------

Checklist for Cooling Towers

1.General	
1.1 Number and capacity of cooling towers	---------- ---------- ----------
1.2 Cooling tower make-up rate Note : Blow-down = 10-15% of make-up	Rate ---------- Blow-down ----------
2. Status of Effluent	
2.1 Cooling water for the compressors is performed in	❑ Open Cycle ❑ Closed Cycle
Note : • *Cooling towers are used in an open cycle for cooling the effluent stream to the tempreture limit regulated by the law.* • *If performed in open cycle it will dilute the final effluent*	
2.2 Record the amount of open cycle cooling	----------

Checklist for Garage

1. General	
1.1 Are detergents or solvents used for washing equipment, trucks, floor,….etc?	❑ Yes ❑ No
1.2 What is the amount of oil and grease used per day?	---------- ----------
1.3 What is the amount of spent lube oil per day ?	----------
1.4 How does the facility dispose the spent oil ?	----------
2. Status of Effluent	
2.1 What is the amount of wastewater generated ?	----------
2.2 Do you observe any oil / foams / solid matter in the inspection manhole?	❑ Yes ❑ No

Checklist for Laboratories

1. General	
1.1 What is the amount of eflluents generated per day?	----------
1.2 Check the disposal method of eflluents	----------
1.3 List the chemicals used in the laboratories	----------
2. Status of Work Environment	
2.1 Are there any odor/ gases/ noise in the work environment? 2.2 Check the exposure time	❑ Yes ❑ No ----------
3. Status of Hazardous Material	
3.1 Check storage of hazardous material. Is it in compliance with the requirements of law 4/1994?	❑ Yes ❑ No
3.2 Are there any first aid measures in place?	❑ Yes ❑ No

Inspection Checklist for Wastewater Treatment Plant

1. General	
1.1 What is the capacity of WWTP?	----------
1.2 Specify the units included in WWTP : Pumping station Equalization tank Aeration tank Sedimentation tank Sludge thickening tank Sludge drying Others	 ❑ Found ❑ Not found ❑ Found ❑ Not found ❑ Found ❑ Not found ❑ Found ❑ Not found ❑ Found ❑ Not found ❑ Found ❑ Not found ----------
1.3 List any chemical and its quantity used for wastewater treatment (coagulants,…..)	---------- ----------
2. Status of Effluent	
2.1 Are there analysis readings for the effluent? If not make your own	❑ Yes ❑ No
2.2 Are the analysis readings included in the environmental register?	❑ Yes ❑ No
3. Status of Solid Wastes	
3.1 Determine the sludge disposal	----------
Note : *Sludge can be use in liquid or dry form in agricultural purposes,according to the Ministrial decree 214/97 issued by the Ministry of Housing*	
3.2 If a third party is involved in disposal, check the presence of contracts and receipts	❑ Found ❑ Not found Comment ---------- ----------

Inspection Checklist for Compressors

1. General	
1.1 Number of compressors	----------
1.2 Type of compressors (air, ammonia or gases)	----------
2. Status of Effluents	
2.1 Identify the type of the used lube oils.	----------
2.2 Check the disposal method of used lube oils	----------
2.3 Check the documents confirming selling of lube oils in the environmental register.	----------
2.4 What is the amount of spent cooling water discharged from the compressors?	----------
2.5 Identify the disposal point of this wastewater.	----------
3. Status of Work Environment	
3.1 Do you notice high noise levels beside the compressors?	----------
3.2 Are noise measurements in the environmental register consistent with observations? If suspicious perform your own measurements	❑ Yes ❑ No
3.3 Do you notice any ammonia leaks at the ammonia compressors?	❑ Yes ❑ No
3.4 Check the analysis results in the environmental register.	
Check the emergency procedures concerning the ammonia compressor.	

Annex G

Annex (G)
Checklist for the Inspection on the Environmental Register and the Hazardous Waste Register

According to Article 22 and 33 of Law 4/1994, the industrial facility should prepare an environmental register and a hazardous waste register for hazardous waste being generated from its activities. Both registers should be prepared according to the forms illustrated in Annex (3) and articles 17 and 33 of the executive regulations of Law 4.

In order for the environmental inspectors to hollow-upon one of the environmental performance aspects of the industrial facility, article 18 and 33 of the executive regulations of the environmental law stipulated the authorities of EEAA inspectors to periodically (every year) follow–up on the data recorded in the registers to ensure its corr. to the actual situation, taking the needed samples and carrying out the necessary tests to investigate the impact of the facility activity on the environment, to identify the of compliance staties of the facility with the standards set for environmental protection, and in raising a subating to be filed in the concerned sector within EEAA, and the report should be signed by the person responsible for monitoring and testing.

This form has been prepare to enable the environmental inspectors to inspect the data recorded in the two registers, in case of the their availability in the industrial facility being inspected. This is carried out through checking the fulfillment of the data in the two registers. Some of the industrial facilities combine the two registers into one register, while others separate them in two different registers. In such case, the inspector checks the data of the hazardous waste register in the part of the hazardous waste in this form. This form assists the environmental inspector, in addition to the data that has been gathered in the inspection form, in preparing the inspection report to clarify the environmental performance of the facility being inspected and forwarding this report to the concerned sector within EEAA to take the necessary actions.

Checklist Used to Inspect the Environmental Register and the Hazardous Waste Register[1]

Name of establishment:……..
Plant:……..……

Data that should be included in the register	Fulfilled/not fulfilled[2]	Inspector comments
Name of establishment		
Address of the establishment		
Name and job title of the person responsible for filling in the register		
The period covered by the current data		
Information of expansion within the establishment		
Type of industrial activity		
Legislations regulating the establishment		
Specific conditions issued for the establishment by EEAA		
Inputs		
Types of main, auxiliary input materials and fuels		
Material Safety Data Sheets (MSDS)		
Hazardous Substances Handling Licenses		
Emergency plans related to hazardous substances		
Products/Production Processes		
Type of products		
Nature of the products (hazardous/non-hazardous)		
Production process description		
Gaseous Emissions		
Indicators for gaseous emissions form the establishment		
Stack heights		
Locations and time intervals of measuring the emissions		
Emission measurements after pollution abatement or treatment		
Treatment efficiency		
Entity carrying out the measurements		

[1] In some cases, the establishments maintain one incorporated register for both the environmental and hazardous waste registers, or have both types of registers separated.
[2] The inspector should tick (✓) for fulfilled information and (x) for unfulfilled information

Data that should be available in the register	Fulfilled/not fulfilled	Inspector comments
Solid Waste		
Quantity (volume/weight/number) of solid waste		
Method of disposal for each type of solid waste		
Documents for off-site disposal		
Liquid Waste		
Types and quantities of liquid waste (except wastewater)[3]		
Method of disposal		
Wastewater		
Quantity of wastewater from endpipe (m^3/day)		
Number of drainages		
Wastewater receiving media		
Sampling date, time and location		
Location and time intervals for measuring the indicators		
Sample types (grab/composite)		
Treatment efficiency		
Discharge analysis after treatment		
Method of handling sludge from of wastewater treatment		
Hazardous Waste		
Type of generated hazardous waste		
Quantity of each type (volume/weight)		
Methods of hazardous waste disposal		
Entities contracted from receiving hazardous waste		
Emergency plans for hazardous waste		
Specific conditions issued for the establishment by EEAA		
Work Environment		
Types of protective equipment		
Indicators of pollution of the work environment		
Means of pollution abatement		
Location and time intervals for measuring the work environment indicators		
Entity carrying out the measurements		

Name of Inspector:…… **Signature:……..**

Date of register inspection:……..

[3] Liquid waste such as oil and grease, liquid solvents, inks, etc.

Annex H

Annex H
Interviewing Methods and Principles

The following section illustrates the main interviewing methods and principles which would help the inspectors to carry out fruitful interviews with the facility representatives during inspection visits.

- Ask questions addressing the different aspects of the inspection process.
- Ask open ended questions for examples questions starting with “what” and “how”, and avoid questions having the answers “yes” or “no”, such as “is there ……..?” “do you …..?” “Are you…..?”
- Follow up on unclear issues.
- Avoid any assumptions.
- Avoid asking leading questions, i.e questions implying certain answers.
- Show interest in the interviewee responses to ensure active discussions.
- Accept moments of silence and do not rush the answers in order to give the interviewee the opportunity to organize his thoughts and phrase the answers.
- End the interview in a positive accent.
- Summarize the main issues discussed to ensure information accuracy.
- Record your observations regarding the main issues raised during the interview.
- Summarize the interview results and your conclusions at the end of the inspection visit.
- Try to keep distractions to a minimum
- Use a suitable voice tone.
- Do not jump to conclusions.
- Do not discuss several issues at the same time in order to avoid distraction.

Annex I

Annex I
Sampling Guidelines

A. Guidelines for industrial wastewater sampling

- For liquid samples (wastewater), ensure that the sampling container is clean and is suitable for the type of wastewater.
- The necessary data should be inscribed on the sampling container identifying place, date and time of sampling. A sampling form is to be attached determining the parameter to be measured.
- In some case, certain parameters need to be measured as their composition varies with time such as temperature, acidity and alkalinity (pH). The measurements should documented in the inspection record.
- The sample should not be taken from the surface layer where oils accumulated, or from the bottom of the tank where sediments are accumulated. It is preferred to take the sample at a depth of 25 cm from the surface of the tank. The sample should be representative to the facility discharge. The sampling time should be taken into account. In case discharging of highly polluted waste water into the sewage network at a certain time, in such case a grab sample is preferred.
- After taking the sample, it should be kept in and ice-box and then transferred to the laboratory.

B. Guidelines for sampling of gaseous emissions

- For stack sampling, the facility should prepare an opening in the lower part of the stack for the gas analyzer hose.
- If the sample is taken from the cyclones outlets (for the cases of mills and tobacco industries) to identify suspended solids, it should be ensured that all units in the shift are in operation.

C. Guidelines for measuring work environment parameters

- In case of noise measurements, the inspector should ensure that all units causing noise are in operation during measurement. The employee’s exposure period to noise should also be known.
- When calculating the heat stress, the inspection should note down the nature of work (heavy/ light/medium) as well as break systems and employee gender (male/female).

D. General guidelines

- The safety procedure should be followed during sampling, particularly in case of hazardous gaseous emissions in the work environment.
- In case of radioactive materials in the facility and potential of radiation emissions, an expert should be delegated to carry out the measurements and take the samples.
- The sample taken and the parameters to be measured should be documented in the inspection record.
- Collected samples should be officially dispatched to the prosecutor, and stamped by the judicial officer.

Form no: /
Post: / /
Subject: taking samples and measuring complementary to the previous measurements
Date: / /

Name of facility : ----------

Date of inspection :----------

Telephone no. : ----------

Address :----------

The required procedure:----------

Stack preparations :----------

Weekly holiday :----------

The results to be received within two weeks from the date above. The follow up process will take place according to the following table:

The follow up table:

Follow up no.	Follow up date	Laboratory report	Laboratory signature
First follow up			
Second follow up			

Annex J

Annex J
Inspection Record[1]

The record is opened on (date) ----/----/----- at the exact time of --------- by means of the inspection team from (the Inspection Authority) ---------- under the leadership of /---------- and the membership of:

	Name	Position/Department
1		
2		
3		
4		
5		

After informing (title/name) ----------, (position) ---------- of our identities and explaining the inspection purpose[2]----------, he assigned (name)----------,(position) ----------to accompany the inspection team during field inspection according to the provisions of law 4/1994 and its executive regulation and other laws and decrees related to the environmental protection. The following was recorded:

Name of the establishment: ----------
Address of the establishment: ----------
Telephone: ----------
Name (Owner/Board of Director Member) of the establishment: ----------
The responsible manger of the establishment: ----------
The licensed activity: ----------

The inspection team undertook the field inspection accompanied by (title/name)---------- assigned by the company manger and who is responsible correctness of the data stated in the record.

[1] The environmental inspection team should keep the original copy of the inspection record and they may give the establishment a copy of the record.

[2] The purpose of the inspection should be identified for example (inspection campaign, investigating a complaint, periodic inspection, etc.)

Inspection Findings[3]:

After the field inspection, the following observations[4] were taken:
1. Inspecting the environmental register, it was found that ----------
---
(If the register is not complete, identify the missing information)

2. Inspecting the hazardous waste register, it was found that:----------
---

3. Inspecting the production lines and utilities, it was found that: ----------
---

Measurements and Analyses[5]

Copies from the documents are taken and a document logbook was prepared. It includes:

No.	Name of Document	Number of Pages

Accordingly we have informed the facility responsible manger/the owner of what is stated in the record, as well as the results of the inspection and he confirmed it and assured the correctness of what is stated in the record, and he signed in front of us, the inspection team.

The technical inspection report will be prepared including the inspection results and the violations (if any) that have been identified based on the results of the analyses and the measurements taken, inspection record and the inspection checklist, as well as the documents

[3] In this section, the observations of the inspector regarding issues, where law violations are expected, are described and these observations will be verified after obtaining the results of the analyses and measurements. The record that the establishment take a copy of, should not include any violations except the ones that could be ensured before obtaining the laboratory report (for example the violations that concerns the incompleteness of the environmental register and the hazardous waste register, the lack of a license for handling hazardous substances and wastes, the noncompliance with the requirements of the law concerning the solid waste).

[4] State the findings in details including whether the environmental register is complete or not, violations identified, etc.

[5] In case measurements are taken, indicate the sampling points.

logbook, according to the articles of law 4/1994 and its executive regulations, in preparation to taking the necessary administrative procedures.

Name of facility representative accompanying the inspection team during inspection:

Signature: ----------

Signature of the (Owner/Chairman) of the facility:----------

Accordingly the record was closed at the exact time of ---------- and was signed by the members of the inspection team confirming the data stated above.

Members of the Inspection Team

	Name	Signature
1		
2		
3		
4		
5		

Annex K

Annex K
Technical Inspection Report

The environmental inspection team from ----------[1] has undertaken a ---------- (define the type of inspection)[2] inspection to the facility whose information is shown in the following table:

Establishment Name	
Address	
Telephone / Fax	
Name of the establishment representative	
Position	

2. Inspection Team Information

No.	Name	Position	Title
1			Team leader
2			Member
3			
4			
5			
6			

3. Inspection Report

Report Preparation Date --------/---------/------

According to the inspection report dated --------/---------/------, the inspection team conducted a field inspection to the facility mentioned above and was accompanied by its representative. The team investigated compliance with law 4/1994. The inspection resulted in the following:

a. Environmental Register and Hazardous Waste Register[3]

---

b. Description of Manufacturing Units in the Facility[4]

Attachments no: ----------

[1] Record the inspectorate to which the inspectors belong

[2] Multimedia inspection, periodic inspection, response to a complain, campaign

[3] State whether the register is maintained and if it is, whether it is complete and if not, state the incomplete parts

[4] In this part, a brief description of the processes undertaken in the facility is attached together with available flowcharts and observations of inspectors.

c. ***Description of Utilities in the Facility***[5]

Attachments no: ----------

d. ***Violating parameters, sources***[6] ***and pollution abatement measures implemented by the facility***

---

e. ***Prohibited material used in the facility (e.g. mazot in a residential area)***

---

4. Efforts Exerted by the Facility to Achieve Compliance[7]

---

5. Measurements and Analyses

Parameter	**Unit**	**Measuring Point**	**Responsible Inspector/Entity**	**Analysis attached in attachment no**[8]

[5] In this part, a brief description of the utilities in the facility is attached together with the observations of inspectors. Utilities include workshops, stores, wastewater treatment plant, boilers, etc.

[6] Sources of pollutants include fuel burning, manufacturing process, whether gaseous emissions, wastewater, solid waste, hazardous waste or work environment parameters

[7] Such as wastewater treatment plant, filter, change the type of fuel, etc.

[8] Attach the analyses and measurements to the report

6. Opinion of the Inspection Team

a. Violations

Based on the inspection documents (inspection checklists, checklist for the environmental register, etc.) and the inspection record and the attached measurements and analyses, the inspection team has deduced the following[9]:

---

b. Follow-up Procedures[10]

---

7. Attachments

Attachment No:	**Document**
-------	Document Logbook
-------	Inspection Report
-------	Inspection checklist
-------	Checklist on environmental register and hazardous waste register
-------	Analyses and measurements
--------	----------
--------	----------

Inspectors Signatures ----------

Decision of the Inspectorate Head

Signature ----------

[9] In case of violation, state the law and the article and describe the violation clearly

[10] Such procedures include: conducting follow-up inspection, take samples and conduct more measurements, notify other inspection entities in case of violations to other laws than 4/1994

Annex L

Annex L
Table of Contents

Legislations regarding the input material requirements[(1)]

1. **Law 59/60 and its executive regulations regarding the work using ionizing radiations and avoiding their hazardous impacts**
   - **Articles 1, 2, 3, 5 of the law,** specifying the licensing requirements and licensing bodies regarding the ionizing radiations emitted from materials and machinery.
   - **Article 7 of the law,** specifying requirements of facility personnel concerned with using ionizing radiations .
   - **Article 15 of the law, and the minister of health decree no. 444/72** specifying the facilities using ionizing radiations.
   - **Article 1 of the ER,** authorizing the ministry of health for supervising the implementation of the protective measures determined in the ER.
   - **Article 3,4 ER,** determining the types of permits required to use ionizing radiations and the licensing requirements.

2. **Law 48/82 regarding protecting the river Nile**
   - **Article 3 of the law,** prohibiting storage or unloading of chemicals or toxic materials on waterway banks, except on the previously licensed areas, this is for existing permits. New licenses are provided through the ministry of irrigation.

3. **Decree of the ministry of labor and manpower no. 55/83**
   - **Article 6,** presents the table for potentially carcinogenic materials. The decree states that measures should be taken to replace such materials with less hazardous ones.

4. **Decree of the ministry of industry no. 977/89 prohibition the use of fereon in the aerosol industry.**
   - The decree prohibits the use of fereon gas as a propellant material in the aerosol industry. The industrial facilities are given a grace period up till end of December 1990, the ban will be effective on the first of January 1991.

5. **Decree of the ministry of economy and foreign trade no. 633/94**
   - **Article 1-H,** stipulates that ozone depleting materials should not be used in the manufacture of air conditions, refrigerators and aerosols.

6. **Law 4/1994 for the environment and its executive regulations**
   - **Article 29 of the law,** prohibits handling of hazardous substances without a permit from the concerned administrative authority.

[1] Includes input raw materials, auxiliary materials such as fuels, chemicals, etc.

- **Article 33 of the law,** identifies the measures to be taken in order to avoid harm to the environment as a result of handling hazardous substances.
- **Article 88 of the law,** determines the penalties for violating the law stipulations related to hazardous substances.
- **Articles 25 of the ER,** prohibits handling of hazardous substances without a permit from the concerned administrative authorities, the licensing authorities are identified.
- **Article 26 of the ER,** identifies the licensing requirements and conditions for handling hazardous substances.
- **Article 31 of the ER,** concerned with measures to be taken to prevent harm to the environment as a result of handling hazardous substances.
- **Article 32 of the ER,** specifies the requirements for packaging of manufactured and imported hazardous substances.
- **Article 42 of the ER,** identifies requirements regarding the type of fuels used including prohibiting the use of mazot in residential areas, prohibiting the use of coal in urban areas and near residential areas, the concentration of sulphur in the fuel used in urban areas and near residential areas should not exceed 1.5 %.

7. Decree of the ministry of industry and mineral resources no. 7/99

- **Article 1,** provides a list of hazardous substances identified by the decree.
- **Article 2,** prohibits handling, using and manufacturing of the identified hazardous substances without a license from the General Organization For Industrialization.
- **Article 3,** totally prohibits the import of hazardous waste or any parts, components, or machinery the use of which generates hazardous waste or hazardous emissions.

Legislations regarding the environmental register

Law 4/1994 and its ER

- **Article 22 of the law,** stipulates that the industrial facilities must keep a register for the environmental status. The article also stipulates that EEAA inspectors are concerned with following up on the data in the register, taking samples and carry out the necessary experiments to identify environmental impacts of the facility as well as the potential violations
- **Article 17 of the ER,** provides that information that should be available in the environmental register.
- **Article 18 of the ER,** authorizes EEAA inspectors to the annual follow up on the register and preparing inspection reports to be submitted to the concerned department in EEAA.

The article also identifies the necessary administrative procedures in cases of violations.

- **Annex 3 of the ER,** presents a model for the data of the environmental register.

Legislations regarding air pollution

1. Decree of the ministry of housing 380/75 regarding the requirements for industrial and commercial establishments and other fires posing potential health hazards.

- **Article 24 and 25,** related with the furnace and stacks requirements**.**

2. Law 4/1994 and its ER

- **Article 35 of the law,** concerned with ambient air emissions from the industrial facilities.
- **Article 47 of the law,** concerned with radiation levels generated from the industrial facilities into the atmosphere.
- **Article 40 of the law,** concerned with regulations and criteria for burning fuel.
- **Article 87 of the law,** determine the penalties related with burning fuels, and identifies penalties for out door air pollution.
- **Article 36 of the ER,** the industrial facilities are required to prevent emission of air pollutants exceeding the limits set in annex 6 of the ER.
- **Article 42 of the ER,** sets the requirements for fuel burning in the industrial facilities, stack heights and the maximum emission limits from fuel burning.
- **Article 43 of the ER,** concerned with conditions regulating the industry of extraction, production and refining of oil.
- **Article 49 of the ER,** concerned with radiation level or the concentration of radioactive materials in the outdoor air.

3. Decree of the cabin of ministers no. 495/2001 amending article 42 item C of the ER of Law 4/1994

- According to the decree, a new paragraph is added determining new limits for the stack emissions from boilers, clay and thermal bricks manufacturing processes. The limits for the other fuel burning devices remain unchanged.

Legislations regarding liquid waste

A. Discharge into the public sewage networks

Law 93/62 and its ER regarding the discharge of liquid waste[(2)]

- **Articles 7 and 8 of the law**, determining the licensing requirements for discharging into the public sewage networks.
- **Article 9 of the law,** authorizes the laboratories of the ministry of health to take periodic samples from the discharge of licensed facilities and determines the administrative procedures to be taken to ensure facilities' compliance with respect to treating their liquid waste. In case such discharges pose imminent changer risk, the discharge could by administratively suspended by governor's decision.
- **Article 14 of the law,** prohibits surface discharge except with a license from entity responsible for sanitary drainage works. (the department of housing and utilities in the city)
- **Article 15 of the law,** concerned with taking samples and inspecting the liquid waste.
- **Article 8 of the ER,** require the establishments to acquire discharge permits approved by the concerned authority, which is (according to article 1 of the decree) the General organization for Sanitary Drainage of Greater Cairo and Alexandria, the departments concerned with sanitary drainage works in the regional cities and centers.
- **Article 10 of the ER,** requires the industrial facility to construct separate chambers for separating strange objects, suspended solid sedimentation chamber, oil and grease separation chambers. The article also requires facilities to carry out primary or secondary treatment for the generated wastewater in order to comply with the ER limits.
- **Article 11 of the ER,** stipulates that the facilities should treat their liquid waste before discharge according to the estimations of the concerned authority.
- **Article 13 of the ER,** provides details, methods, conditions, time and places for sampling. The concerned health officer "as representative of the ministry of health" is the one responsible for taking samples and filling in the sampling forms which are submitted with the samples to the concerned laboratories, or to the laboratories authorized by the ministry of health.
- **Article 14 of the ER,** sets criteria and specifications for the sewage waste water licensed for discharge into the public sewage network.
- **Article 15 of the ER,** sets general requirements and criteria for the treated sanitary waste which are reused for irrigation, the article allows the use of the sewage waste water for land irrigation after obtaining a permit from the ministry of health. The article however prohibits the use of sewage wastewater in irrigation of edible crops which are eaten raw, it also prohibits grazing milk producing cattle on land irrigated by sewage waste water. EEAA is concerned with assessing the impact for the

[2] The ER of law 93/62 is replaced by the decree no. 44/2000.

areas in which such water is used. The use of sewage waste water in agriculture is divided into three categories depending on the level of treatment. The use of sewage wastewater is to take place only after a permit from the concerned authority to be determined by the minister of housing.

- **Article 17 of the ER,** prohibits the establishment from diluting their industrial wastewater by any means as partial or total alternative of proper treatment.
- **Article 18 of the ER,** the article authorizes the representatives of the concerned bodies, having judicial impoundment, to carry out inspection on the sewage networks, taking samples and inspect the liquid waste registers.
- **Articles 21 and 22 of the ER,** permit the entity concerned with sewage works to receive concentrations exceeding that legal permissible limits for the BOD and TSS for a certain time period (6 months) starting from the discharge licensing date. The industrial facilities will then be charged according to the categorization set by the concerned entity.

B. Discharge of liquid waste by sweeping or other methods

1. Law of general cleanliness no 38/67

- **Article 20 of the ER,** specifies the requirements for sewage discharge methods and the sweeping waste for facilities in areas not connected to the public sewage system.

2. Decree of the minister of housing no 380/75 concerning the general requirements for the industrial and commercial establishments posing potential health hazards.

- **Articles 19 to 21,** set general requirements for discharge methods for facilities not connected to the public sewage network.

C. Discharge into waterways (the river Nile and its branches, canals, drains, lakes, ponds, closed water surfaces)`

Law 48/82 for protecting the River Nile

- **Article 2 of the law,** prohibits the discharge of disposal of solid or liquid or gaseous waste generated from industrial facilities into the waterways without a permit from the ministry of irrigation.
- **Article 3 of the law,** (for existing facilities), the laboratories of the ministry of health are concerned with carrying out periodic analysis for the treated WW generated from facilities having discharge licenses. The time schedule for sampling and analysis is to be determined by the ministry of health as well as any additional analysis required by the ministry of irrigation.

- **Article 3 of the law,** a grace period of three months is given to the facility from the notification date to take the necessary treatment measures. If measures are not implemented during the grace period, the ministry of irrigation withdraws the license and steps the discharge into the sewage network. If the discharged water presents imminent danger, the owner of the facility is notified to eliminate the harm caused otherwise the ministry of irrigation is to take the necessary actions to the harm on his expenses, or withdraw the license and ceases the discharge administratively.
- **Article 4 of the law,** (for new facilities) it is not allowed to construct new facilities generating waste that are discharged into the waterways without a license from the ministry of irrigation, if the facility is committed to establish a treatment unit.
- **Article 4 of the ER,** requires that the wastewater does not contain any pesticides or radioactive materials or any floating materials when discharged into the waterways.
- **Article 6 of the ER,** permits discharge of treated wastewater according to the conditions provided in the ER.
- **Article 7 of the ER,** determines the discharge of machinery cooling water.
- **Article 8 of the ER,** prohibits the discharge of wastewater containing radioactive materials into ground water reservoirs.
- **Articles 9 and 10 of the ER,** determines the specifications of the wastewater pipes.
- **Article 11 of the ER**, concerned with discharging filter cleaning wastewater.
- **Articles 12 to 30 of the ER,** concerned with issuing licenses and monitoring the facility compliance with the sampling procedures.
- **Article 55 of the ER,** authorizes the representatives of the ministry of irrigation, health and the concerned sanitary organization to enter the industrial facilities and carry out inspection on the liquid waste discharge and take samples for analysis.
- **Articles 61 to 69 of the ER,** determines the specifications of the treated waste water discharged into the waterways.

D. Discharge into sea water

1. Law 4/1994 for the environment and its ER

- **Article 52 of the law,** concerned with sea pollution resulting from facilities working the field of extraction and using of oil fields.
- **Article 69 of the law,** prohibits disposal of untreated substances or waste or liquids generated from industrial facilities on the Egyptian shorelines.

- **Article 72 of the law,** determines the responsible person for the violations within the industrial facility.
- **Article 73 of the law,** identifies the area along the Egyptian shorelines in which establish industrial facilities is prohibited. It also determines the necessary licenses for establish facilities in this area.
- **Article 87 of the law,** determines the penalties regarding pollution of the sea by industrial establishments.
- **Article 90 of the law,** determines penalties for facilities working in the field of oil extraction and consumption of marine natural resources.
- **Article 58 of the ER,** stipulates that facilities constructed on or near sea coasts and generate polluting materials should be permitted.
- **Article 58 of the ER,** stipulates that facilities should abide by the limits presented in annex (1) for discharging liquid waste into sea water. It also prohibits the discharge of non degradable materials which are stipulated in annex (10).
- **Article 59 of the ER,** determines the area in which it is prohibited to establish facilities and the required permits for constructing facilities in such area.

2. **Law for irrigation and discharge**
   - **Article 86 section (1), chapter (6) of the law,** prohibits the establish of any facilities on the northern coast in the setback line (200 m from inland).
   - **Article 56 chapter (7) of the ER,** prohibits the establish of any facilities in the prohibited area mentioned in article 86 of the law without approval from the Shore Protection Authority.

Legislation regarding pollution in work environment

1. **Law 59/60 regarding the us of ionizing radiations and protection against its hazards**
   - **Articles 19 to 21,** sets the health and age for personnel working in the field of ionizing radiations.
   - **Articles 23 to 40,** identifies general requirements for protection against the hazards resulting from exposure to the ionizing radiations.

2. **Decree of the ministry of labor and manpower and training no 78/67 regarding the precautions for protecting labor from health hazards, machinery and equipment**
   - The decree stipulates the requirements for the work environment including ventilation, temperature, humidity, lightness, noise, vibrations, personal protection equipments.

- The decree presents table of the maximum limits for light and gaseous emission.

3. Decree no 470/71

- The decree sets limits for gaseous emissions, and dusts in the work environment.

4. Decree of the minister of health no 444/72

- Is concerned with applying article 15, regarding licenses, of law 59/60 to organizations using ionizing radiations for application proposes.
- Identified the industrial facilities to which the laws applies.

5. Decree of the ministry of housing no. 380/75

- **Articles 13 and 14** stipulates the requirements for ventilation and lightness regarding the work environment in the industrial facilities.
- **Article 26,** is concerned with requirements regarding labor safety during operating machinery as well as noise and vibrations. The article does not set numerical limits for such parameters.
- **Article 27,** stipulates that the facilities should provide personal protection equipment when required.

6. Labor Law 137/81

- **Article 114 chapter (5),** authorizes the ministry of manpower and other labor concerned local councils to carry out inspection on industrial facilities subject to law 453/54.
- **Articles 115 to 120 chapter (3),** presents the procedures to be taken by the facility to ensure the work environment.
- **Articles 125 to 126 chapter (5),** concerned with inspection procedures of the health and labor safety measures.
- **Articles 127 to 130 chapter (6),** concerned with measures to be taken by the facilities for managing the health and labor safety practices.

7. Decree of the ministry of manpower and training no. 55/83 regarding requirements to be implemented for health and safety

- The decree specifies the general requirements and precautions to protect against vibrations, noise and ionizing radiations subject to law 59/60.
- The decree specifies the precautions to protect against mechanical and physical and chemical hazards in the work environment. It also describes methods for managing dust and gaseous emissions.
- Table (1) is concerned with the temperature conditions in the work environment.
- Table (2), is concerned with the light conditions in the work environment.

- Table (3), is concerned with the noise.
- Table (4), is concerned with the hazardous chemical in the work environment (134 substance)
- Table (5), is concerned with the limits for inorganic dusts.
- Table (6), is concerned with potential carcinogenic substances.

8. Decree of the ministry of manpower and training no 116/91 specifying the facilities and equipment for health and labor safety and training entities

- The decree applies to facilities having 50 or more employees. These facilities should establish department concerned with health and labor safety. The decree determines the role and responsibilities of such departments as well the necessary equipment for measuring the work environment hazards.

9. Law 4/94 and its ER

- **Article 42 of the law,** is concerned with noise limits in the work environment.
- **Article 43 of the law,** stipulates that the facility owner is to take the necessary measures to prevent polluting gaseous emissions from exceeding the set limits.
- **Article 44 of the law,** the facility owner is to take the necessary measures to maintain the temperature and humidity in the work environment within the permissible limits.
- **Article 87 of the law,** determines the penalties for violating the noise limits, temperature ventilation requirements and gaseous emissions in the work environment.
- **Article 44 of the ER,** the facilities should abide by the noise permissible limits set in annex (7).
- **Article 45 of the ER,** the facilities should abide by the permissible limits for gaseous emissions and ventilation set in annex (8).
- **Article 46 of the ER,** the facility owner is to take the necessary measures to maintain the temperature and humidity in the work environment within the limits set in annex (9).

Legislations regarding solid waste

1. Law for general cleanliness no 38/67 and it ER and its amendments by law 31/76.

- **Item (A) of article 5 of the ER,** the owners and dwellers of buildings referred to in article 1, including industrial facilities, should contract entities to receive their solid waste. The solid waste should be kept in certain containers.
- **Article 6 of the ER,** determines the specifications of the solid waste containers (garbage).

2. Law 48/82 for protecting the Nile

- **Article 2 of the law,** prohibits collection or disposal of solid waste on the banks of any surface waters except in specified areas and with a license form the ministry of irrigation.

3. Law 4/94for the environment

- **Article 37 of the law,** prohibits disposal of solid waste in undesignated places.
- **Article 87 of the law,** determines the penalties for violations of the previous article.
- **Article 38 of the ER,** sets the requirements for disposal of solid waste and the procedures to be taken in case of incineration of certain types of such waste.

Legislations regarding hazardous waste

Law 4/94 for the environment

- **Article 29 of the law,** stipulates that it is prohibited to handle hazardous waste without a license from the competent administrative authority.
- **Article 31 of the law,** the facilities handling hazardous waste should be licensed.
- **Article 33 of the law,** the facilities generating hazardous waste should keep a register for such waste.
- **Article 88 of the law,** determines the penalties for violating the stipulations regarding hazardous waste.
- **Article 25 of the ER,** determines the concerned hazardous waste licensing authorities**.**
- **Article 26 of the ER,** is concerned with hazardous waste licensing requirements and conditions.
- **Article 27 of the ER,** determines the conditions of hazardous waste license suspension.
- **Article 28 of the ER,** presents the procedures for hazardous waste management.
- **Article 29 of the ER,** stipulates that hazardous waste treatment facilities should obtain a license form the concerned governorate.
- **Article 33 of the ER,** presents model for the hazardous waste register to be kept by the industrial facilities.