

EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

ERC Hydro-Cracking Complex Project at Mostorod FINAL VERSION

Appendix 12.5 – Construction-Related Management Plan

51287-1

December 2008

Infrastructure & Environment

10th Floor
21, Misr Helwan Agriculture Road
Maadi, Cairo, Egypt
Telephone: +202 2359 5628 / 1487 / 1576 / 3819
Facsimile: +202 2359 1038
www.worleyparsons.com

© Copyright 2008 WorleyParsons Infrastructure and Environment Limited

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

CONTENTS

1.	INTRODUCTION	1
1.1	Purpose	1
1.2	Scope	1
1.3	Responsibilities	1
1.3.1	The Contractor	1
1.3.2	Project Director/Project Managers	2
1.3.3	Environmental Control Supervisor	2
1.3.4	Yard Supervisor(s)	3
1.3.5	Senior and Supervisory Personnel	3
1.3.6	Sub-Contractors	3
1.3.7	Environmental Control Officer	3
1.3.8	Environmental Compliance by Contractors	4
2.	PROCEDURES	5
2.1	Objectives	5
2.2	Legal Framework and International Standards	5
2.2.1	Egyptian Legislation	5
2.2.2	Lender Requirements	6
2.2.3	Company Policies and Procedures	6
2.3	Construction Related Procedures	6
2.3.1	Policies and Procedures	6
2.3.2	Air Quality	7
2.3.3	Noise	8
2.3.4	Soil	8
2.3.5	Groundwater	8
2.3.6	Surface Water	9
2.3.7	Terrestrial Ecology	10
2.3.8	Social	10

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

2.3.9	Health.....	10
3.	ENVIRONMENTAL AWARENESS TRAINING/INDUCTION	11
4.	ENVIRONMENTAL REPORTING PROCEDURES.....	12
4.1	Environmental Incidents Reporting	12
4.2	Environmental and Community Emergency Response Plans	12
5.	ENVIRONMENTAL CONTROL MEASURES.....	13
5.1	Interaction with Local Residents	13
5.2	Workforce Health, Safety and Security	13
5.3	Public Safety	13
5.4	Construction Camp/Laydown Area	14
5.5	Site Clearance and Demolition	14
5.6	Top Soil Removal and Storage	14
5.7	Protection of Flora and Fauna	14
5.8	Workshop, Equipment Maintenance and Storage	14
5.9	Materials Handling, Use and Storage	15
5.10	Hazardous Substances	15
5.11	Fuel Storage.....	15
5.12	Eating Areas.....	15
5.13	Ablution Facilities	16
5.14	Solid Waste Management.....	16
5.15	Contaminated Water	16
5.16	Air Emissions	16
5.17	Dust.....	16
5.18	Noise	17
5.19	Light.....	17
5.20	Access Roads	17
5.21	Fire Control	18
5.22	Access to Site	18

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

5.23	Other Construction Activities.....	18
------	------------------------------------	----

Tables

TABLE 1	ENVIRONMENTAL AND SOCIAL TRAINING REGISTER	19
TABLE 2	ENVIRONMENTAL AND SOCIAL INCIDENTS REGISTER	20
TABLE 3	ENVIRONMENTAL AND SOCIAL COMPLAINTS REGISTER	21

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

Glossary

Contaminated Water	Water (surface or ground) contaminated by the Contractors' activities e.g. water containing cement and runoff from plant/personnel wash areas.
The Contractor	The chosen contractor undertaking the EPC contract for the Project, and its appointed sub-contractors.
ERC	Egyptian Refining Company, the Project proponent.
Environment	The surroundings within which humans exist and that are made up of: <ul style="list-style-type: none"> • the land, water and atmosphere; • micro-organisms, plant and animal life; • any part or combination of i) and ii) and the interrelationships among and between them; and • the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.
Environmental Control Supervisor (ECS)	A suitably qualified staff member nominated by the Contractor to supervise the implementation of the Construction Related Management Plan (CRMP).
Environmental Control Officer (ECO)	An ERC employee tasked with monitoring the environmental performance and compliance of Contractors involved in the construction of the Project.
Impact	Impact refers to any change to the built/physical environment whether adverse or beneficial, wholly or partially resulting from a project activity. Examples of impacts might include the contamination of water leading to human health issues.
Method Statement	A written submission by the Contractor to the ERC Engineer in response to the specification, or as requested by the ERC Engineer, setting out the plant, materials, labour and method the Contractor proposes to use to carry out an activity.
Potentially Hazardous Substance	This is a substance which, in the reasonable opinion of the ERC Engineer, can have a deleterious effect on the environment.
Solid Waste	This relates to all solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).
Site	The area in which construction and construction related activities is taking place.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN**

1. INTRODUCTION

1.1 Purpose

The objective of this Construction Related Management Plan (CRMP) is to define the procedures to ensure that environmental management during construction is undertaken in accordance with national legislation, International and European Financial Institution requirements and ERC's requirements and commitments. As described in Chapter 12, the final version of the Plan will be prepared by the Contractor around the time of mobilising to Egypt. However, a preliminary draft Plan is presented here to enable a clear understanding of the approach and content of the Plan. Prior to mobilisation, the Contractor will prepare all the necessary risk assessments, method statements, management procedures and monitoring programmes in discussion with and as required by EEAA and other relevant Regulators.

This Plan will need to be read and implemented in conjunction with other relevant documentation, including the project Transport Management Plan; Waste Management Plan; and the Decommissioning, Demolition and Decontamination Plan. Particular attention should be given to interfacing with the Social Management Plan (SMP) and the Grievance Mechanism embedded therein.

The Contractor operates Environmental Management Systems in accordance with ISO 14000 principles and requirements (refer to Appendix 9 and 14 for additional details). Consequently, in order to maintain certification, the Contractor must show a continuous improvement in reducing their impact on the environment, including that impact associated with construction activities.

1.2 Scope

A series of Environmental Management Plans will be prepared as part of the design, construction and operational phases of the ERC Hydro-Cracking Project.

This Plan applies to construction related activities at the North Plot, all South Plots and the Laydown Area and will cover site preparation, demolition, site clearance and construction to ensure effective environmental and social management for the Project.

1.3 Responsibilities

1.3.1 The Contractor

- The overall responsibility for ensuring compliance lies with the Contractor.
- The Contractor shall ensure that all staff members, sub-contractors and suppliers understand and adhere to the CRMP.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

1.3.2 Project Director/Project Managers

The Project Director/Project Managers are specifically responsible for:

- Overall responsibility for ensuring that the project prepares and implements the Project Environmental Management Plan together with any Procedures and Method Statements and complies with all legislative and contract requirements.
- Representing matters relating to the project with the Client, Project Management Consultants and the Regulatory Authorities.
- Ensuring sufficient resources (people time and money) to plan, execute and monitor environmental aspects of the contract, specifically related to construction impacts.
- Co-operating with internal and external audits; deciding and implementing appropriate actions resulting from environmental audits, environmental incidents and complaints.
- Managing of relationships between the Contractor, external environmental organisations/agencies and the general public.

1.3.3 Environmental Control Supervisor

The Contractor shall nominate a suitably qualified staff member as Environmental Control Supervisor (ECS) to supervise the implementation of the CRMP on site.

The Environmental Control Supervisor is site-based and specifically responsible for:

- Ensuring that line management is aware of their obligations and responsibilities. Co-ordinating all environmental input to the Project.
- Preparation and maintenance of the Project Environmental Management Plan (PEMP) and the Construction Related Management Plan.
- Ensuring the Construction Related Management Plan, Procedures and Instructions are in place and comply with national legislation and International and European Financial Institution requirements.
- Liaison with ERC, EEAA, Statutory & Non-Statutory Authorities, local communities, other stakeholders and Third Parties on all construction related matters.
- Liaison on a day-to-day basis with Project Management and in particular the Construction Department at the work face.
- Carrying out Weekly Site Inspections and environmental management awareness.
- Development and provision of induction training and tool-box talks.
- Day to day implementation of the CRMP and co-ordination of all environmental and social matters on site.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

- Managing and dealing with, in conjunction with ERC Community Liaison Officers, any social conflicts or incidences with adjacent, directly affected communities that may take place from time to time. Any such conflicts must be reported through the grievance procedure.
- Liaison with the ERC as and when required to resolve any disputes or grievances.
- Ensuring that all staff members are adequately trained and aware of the CRMP.
- Weekly environmental inspections.
- Environmental inspections with the ERC and EEAA (where required).

1.3.4 Yard Supervisor(s)

The Yard Supervisors will be responsible for:

- Ensuring Construction Site Bases (North and South Plots and Laydown areas) are kept clean and tidy at all times, as is practicable.
- Ensuring site activities are carried out in accordance with the recommendations set out in the Construction Related Management Plan, Waste Management Plan, Social Management Plan and Transport Management Plan.

1.3.5 Senior and Supervisory Personnel

All of the Contractors' senior and supervisory staff members shall familiarise themselves with the full contents of the CRMP. They shall understand and know how to implement the control measures of the CRMP, and shall be able to assist other staff members in matters relating to the CRMP.

1.3.6 Sub-Contractors

A representative of all sub-contractors will receive a copy of the CRMP and will acknowledge their commitment to comply with the terms therein.

1.3.7 Environmental Control Officer

ERC shall appoint an Environmental Control Officer (ECO) who will conduct environmental audits of the construction site on behalf of ERC.

During the pre-construction phase the ECO will:

- Communicate the contents of the CRMP to the appointed Contractors.
- Identify, in consultation with each Contractor, suitable arrangements for the ablution facilities and storage areas.

During the construction period the ECO will:

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

- Schedule and undertake site visits to monitor compliance with the CRMP.
- Be prepared to visit sites with EEAA officials if requested.
- Report on site visits including photographs and completing the checklist for compliance. All non-compliances are to be recorded in the Environmental Auditing Checklist.
- Issue site instructions on non-compliance of the CRMP to the ECS at the site meetings. Attend to any public complaints and resolve any conflicts, together with the Community Liaison Officers, ensuring that such complaints are duly registered through the Project Grievance Mechanism (see ERC Social Management Plan).
- Report on non-compliances to the Project Manager within 24 hours.
- Following the completion of the contract the ECO will ensure that a final environmental audit will be performed.

1.3.8 Environmental Compliance by Contractors

The Contractor shall comply with the CRMP as part of the project management process through the implementation of its Environmental Management System to ensure fulfilment of its ISO 14001 requirements.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN**

2. PROCEDURES

2.1 Objectives

The Construction Related Management Plan has the following objectives:

- Mitigation of negative impacts resulting from the Project construction phase.
- Enhancement of benefits that will arise from construction of the facility.
- Assisting with the selection of routes for access and services which minimise environmental harm and social disturbance.
- Compliance with Egyptian legislation, as well as International and European Financial Institution requirements and good international industry practice.
- Ongoing maintenance of goodwill and good relations with communities, civil society and the government, especially at the local but also at the national level.

To meet these objectives, ERC's strategy is to develop Management Plans relating to:

- Waste;
- Fuel & oil storage;
- Decommissioning and decontamination;
- Monitoring;
- Transport;
- Construction; and
- Social issues.

The mitigation measures described in these plans are primarily aimed at reducing disturbance caused to neighbouring communities but also establish strategies for improving overall environmental performance in the context of current directives on climate change.

2.2 Legal Framework and International Standards

The CRMP report has been prepared to meet Lender expectations in terms of compliance with a number of environmental and social legislative requirements and guidelines, including but not limited to:

2.2.1 Egyptian Legislation

The CRMP will meet various national legislative requirements including:

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

- Egyptian Environmental Affairs Agency (EEAA) Law 4 of 1994 and its Executive Regulations (ER) issued via Decree No .338 of 1995 and amended via Decree No. 1741 of 2005; and EEAA publication: “Environmental Impact Assessment (EIA) guidelines for Oil and Gas sector” (October 2001/January 2005).
- Regulations with respect to planning and permitting for construction activities.

2.2.2 Lender Requirements

Lender requirements include adherence to good international industry practice including:

- International Finance Corporation (IFC) and World Bank guidelines, including the Pollution Prevention and Abatement Handbook (PPAH), (World Bank Group, April 2007);
- Equator Principles (EP) (July 2006);
- International and European Financial Institution requirements; and
- World Health Organisation (WHO). Guidelines for drinking water quality (3rd Edition), incorporating 1st Addendum. 2006.

2.2.3 Company Policies and Procedures

The Project will also be governed by the policies and procedures defined by the proponent (ERC) and the EPC Contractor. As a certified ISO14001 company, the contractor’s policies and procedures should be consistent with good international operating standards.

2.3 Construction Related Procedures

The personnel identified in Section 1.3 will be responsible for implementing the following measures together with, where applicable, the ERC Community Relations Manager and the Contractor’s Induction Training Manager. ERC and the Contractor will ensure that adequate consultation takes place with surrounding communities with respect to the grievance procedure as described in the Social Management Plan (SMP) so that all stakeholders are aware of the steps they should take in raising a concern about construction related impacts.

2.3.1 Policies and Procedures

Both ERC and the Contractor will establish appropriate policies and procedures to manage the construction process including, but not limited to, labour and employment, operational health, safety and security. These documents will clearly identify the objectives and responsibilities for carrying out the actions identified by all environmental management plans, including the CRMP.

During the construction phase the Contractor will be responsible for implementing mitigation measures relating to the potential for decreased air quality as a result of such activities. The Project Director will ensure that the following measures are incorporated into construction activities and the general corporate ethos:

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

2.3.2 Air Quality

- Exhaust Gas Emissions:
 - Minimise unnecessary journeys.
 - Adopt a switching off policy for machinery and equipment not in use.
 - Ensure that low CO₂ emissions equipment is chosen during the procurement process.
 - Ensure proper maintenance of all equipment to minimise emissions.
 - As far as is practically possible, purchase products with a low “carbon footprint”.
 - Comply with Egyptian Law on exhaust emissions from equipment and vehicles.
 - Choose energy sources/fuels for equipment that produce the least amount of CO₂ emissions.
 - Consider renewable energy sources when possible.
- Dust – Transport:
 - Use active suppression techniques where applicable including containing work areas and use of water (consider polymer-based additives that bind dust particles for longer periods) on roadways.
 - Use or establish hard-covered sealed roadways for vehicle movement; ERC is committed to using paved, hard-surface roads to the extent feasible to minimise dust generation and not exacerbate the existing situation.
 - Minimise plant movement and vehicle journeys.
 - Wash vehicle wheels / chassis before leaving site when necessary.
 - Strictly enforce, with ERC and Contractor’s vehicle drivers, compliance with appropriate, established speed limits on roadways to minimise dust generation;
 - Prevent off-site migration of dust using appropriate screens.
 - Adjust activities during windy conditions to minimise dust.
 - Cover the loads that have the potential to create dust on vehicles carrying construction material prior to their leaving their loading point.
- Dust – Demolition:
 - Undertake asbestos surveys and remove / manage any asbestos prior to demolition (work to be undertaken by suitably qualified personnel).
 - Avoid double-handling of materials.
 - Cover the loads of vehicles carrying demolition waste prior to their leaving site.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

2.3.3 Noise

- Site noisy equipment (e.g. generators) away from receptors where possible.
- Use baffles and acoustic insulation where appropriate.
- Restrict working hours for particularly intrusive activities such as piling.
- Minimise machinery operation and vehicle movements.
- Implement the grievance mechanism, whereby any noise disturbance experienced by nearby community receptors can be reported to site management, who will be responsible for remedial actions such as erection of noise barriers or alterations to the working procedures.
- Inspect and maintain vehicles and equipment regularly.

2.3.4 Soil

- General:
 - Prevent discharge of wastewater streams to ground.
 - Control all wastewater streams and ensure appropriate collection, treatment and discharge in accordance with the Waste Management Plan.
 - Minimise on-site storage of potentially contaminating materials.
 - Store potentially contaminating materials (e.g. diesel fuel) in a manner that minimises the risk of accidental release (e.g. appropriate secondary containment).
 - Formulate a spill contingency plan and have appropriate response equipment available on site.
 - Implement a comprehensive waste management policy which ensures the safe storage and timely treatment / removal and disposal of waste.
- Demolition and Site Preparation Works:
 - Ensure that any existing contaminated soil to be removed from site is taken to an appropriately licensed disposal facility.

2.3.5 Groundwater

- Decreased Quality Due to Contamination:
 - Prevent discharge of contaminants and wastewater streams to ground.
 - Control all wastewater streams and ensure appropriate collection, treatment and discharge.
 - Minimise on-site storage of potentially contaminating materials.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

- Store potentially contaminating materials (e.g. diesel fuel) in a manner that minimises the risk of accidental release (e.g. appropriate containment)
- Formulate a spill contingency plan and have appropriate response equipment available on site.
- During demolition and site preparation works, purge all tanks and pipes of residual hydrocarbons or contaminated water prior to demolition, and discharge this via oil/water separators, the water treatment facility or an appropriately licensed/approved off-site facility, as appropriate.
- Identify the presence of residual contaminants at the site by appropriate investigation, and manage these as necessary prior to demolition.
- Implement strict controls to prevent release and flow of contaminants to ground.
- During the plant equipment testing and start-up stage, ensure to discharge water used in the testing and start-up process appropriately.
- Reduced Groundwater Availability due to Dewatering of Shallow Aquifer:
 - Identify potential receptors at risk in the area (e.g. local residents with shallow wells) prior to dewatering.
 - Be prepared to provide an alternative water supply to affected receptors.

2.3.6 Surface Water

- Decrease in Surface Water Quality Due to Dust:
 - During demolition and site preparation works, apply dust control measures (see Table 7-1); in particular prevent off-site migration of dust to surface water canals.
- Decrease in Surface Water Quality Due to Contamination:
 - Do not discharge waste water streams to surface water without treatment.
 - Control site run-off (e.g. water used for dust suppression).
 - Ensure domestic or any other type of wastewater is collected, treated and discharged via the facility water treatment plant.
 - Minimise on-site storage of potentially contaminating materials.
 - Store potentially contaminating materials (e.g. diesel fuel) in a manner that minimises the risk of accidental release.
 - Formulate a spill contingency plan and have appropriate response equipment available on site.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

- For demolition and site preparation works, identify the presence of residual contaminants at the site by appropriate investigation, and manage these as necessary prior to demolition.
- In the event of residual contaminant release, implement strict controls to prevent flow to surface water.
- In the event of plant equipment testing and start-up is undertaken, ensure to discharge water used in the testing and start-up process appropriately.

2.3.7 Terrestrial Ecology

- Establish fencing to discourage access to working areas;
- Fence off excavations / pits;
- Store chemicals, materials and wastes appropriately so as not to attract animals.

2.3.8 Social

A comprehensive review of social issues during the construction phase of the Project can be found in the Social Management Plan.

2.3.9 Health

A comprehensive review of health issues during the construction phase of the Project can be found in the Social Management Plan.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN**

3. ENVIRONMENTAL AWARENESS TRAINING/INDUCTION

The ECO will work with the Contractor's ECS to develop Environmental Awareness Training as part of the Project Induction for all ERC staff and Contractors. The ECS will be responsible for delivery of the programme to the Contractor's staff and sub-contractors. The content of the induction training shall include, as a minimum;

- An introduction to the Project.
- A review of the CRMP focussing on compliance with environmental and social standards and commitments.
- Each staff member shall sign an Environmental and Social Training Register (Table 1) as proof of their training/induction.

This programme will run in conjunction with HSSE induction training as part of the Contractors ISO requirements and will also include a social module covering social commitment, standards and background on the social context.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN**

4. ENVIRONMENTAL REPORTING PROCEDURES

4.1 Environmental Incidents Reporting

An Environmental and Social Incidents Register (Table 2) and an Environmental and Social Complaints Register (Table 3) will be in place and will be maintained by the ECS.

Upon occurrence of non-compliance or a complaint of an environmental nature the incident will be recorded in the relevant register in accordance with the Project Grievance Mechanism. The registers must be made available to the ECO for every site visit.

Environmental and social management related issues will form part of the agenda and be discussed at all construction site meetings. A copy of the relevant sections of the minutes of these site meetings must be made available to the ECO.

4.2 Environmental and Community Emergency Response Plans

An emergency response programme/preparedness plan will be finalised by the Contractor before any major site activities take place. This must be developed in accordance with good international industry practice. Individual emergency preparedness plans will be required for various aspects of the operation, and the approach to reporting and response to emergencies must be based on good practice principles, i.e. ISO 14001 requirements.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN**

5. ENVIRONMENTAL CONTROL MEASURES

This section contains “on the ground” specifications which will need to be followed by the Contractor. The standard specifications are relevant to all construction activities of all project components and are in addition to the standard engineering specifications.

5.1 Interaction with Local Residents

Contact with the local administration by the ECS in conjunction with the ECO and Community Liaison Officer must precede any activity on the ground. All attempts must be taken to minimise the amount of disturbance to local residents.

Should the construction team need to traverse private land outside of the servitudes then permission must be obtained from the land owner.

All complaints from local residents must be recorded in the Environmental Complaints Register and resolved through the implementation of the Grievance Mechanism.

5.2 Workforce Health, Safety and Security

Contractors must have a suitable Safety Policy; this must be presented to and approved by ERC and be compliant with Egyptian Law.

The contractor shall ensure that:

- Appropriate first aid facilities and trained personnel are available at all construction sites.
- All construction workers are provided with appropriate PPE (Personal Protective Equipment).
- Plan use of heavy construction and vehicle/machinery activity for daylight hours to minimise risks associated with working in low light conditions.
- Provide health- and communicable disease- awareness programmes.
- If an employee on site is known to have a notifiable disease it is the responsibility of the Contractor to inform ERC who is responsible for informing the appropriate public health officer.

5.3 Public Safety

The contractor shall provide:

- Adequate signage on construction sites to minimise risks to the public.
- Adequate signage for motorists and pedestrians along access routes to minimise risks posed by construction vehicles and construction activities.
- Adequate traffic safety measures along access routes to minimise public risk.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

The ECO together with the contractor will ensure that a comprehensive Road Safety Campaign is carried out in neighbouring communities and communities along any supply route where significant traffic impacts will occur.

5.4 Construction Camp/Laydown Area

Although options for worker accommodation have not been finalised, in the event that construction workers will be housed in a dedicated complex or camp, appropriate actions will be taken to minimise environmental harm and social disturbance, through inter alia Environmental & Social assessment and mitigation if required.

5.5 Site Clearance and Demolition

This activity shall be performed in accordance with the Decommissioning, Decontamination Plan and Waste Management Plan (WMP) ensuring that all attempts are made to avoid damage to the environment and disturbance to surrounding communities.

The ERC CLO must be notified immediately (and no later than 24 hours) should any accidental destruction of private property occur. The Contractor will be responsible for all costs resulting from accidental destruction of property.

5.6 Top Soil Removal and Storage

Prior to site establishment and any earthmoving operations, the Contractor shall strip and stockpile all topsoil, if any, within the works areas for subsequent use in the rehabilitation and revegetation of the site.

5.7 Protection of Flora and Fauna

Except to the extent necessary for the carrying out of the works i.e. defining the construction sites and lay-down areas, flora shall not be removed, damaged or disturbed.

Trapping, poisoning and/or shooting of animals is strictly forbidden. No domestic pets or livestock are permitted on site.

5.8 Workshop, Equipment Maintenance and Storage

Where practical, all maintenance of equipment and vehicles on site shall be performed in a workshop and measures identified in the WMP are employed to ensure that water and/or soil is not contaminated. These measures may include:

- The workshop is kept neat and clean at all times.
- The workshop floor shall be bunded and sloped towards an oil trap or sump to contain any spillages of substances (e.g. oil).

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

- Drip trays shall be provided in construction areas for stationary and “parked” plant and, where practical, when servicing vehicles.
- All vehicles and equipment shall be kept in good working order and serviced regularly. Leaking equipment shall be repaired immediately or removed from the site.
- The workshop shall be appropriately ventilated and vehicle exhaust shall be discharged to the open air (not indoors).

5.9 Materials Handling, Use and Storage

The Contractor shall ensure that:

- Drivers are informed of all procedures and restrictions (including “no go” areas) required to comply with the specifications.
- Drivers are supervised during off-loading by someone with an adequate understanding of the requirements of the specifications.
- Materials shall be appropriately secured to ensure safe passage between destinations. Loads including, but not limited to, sand, stone chip, fine vegetation, refuse, paper and cement, shall have appropriate cover to prevent spillage from the vehicle during transit.

The contractor shall be responsible for any and all clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.

5.10 Hazardous Substances

Hazardous chemical substances used during construction shall be stored in secondary containers away from neighbouring residential areas in accordance with the implementation of procedures in the WMP, OMP, and the contractor HSSE Plan. The relevant Material Safety Data Sheets (MSDS) must be available on site. Procedures detailed in the MSDS must be followed in the event of an emergency situation.

5.11 Fuel Storage

Fuel storage shall be undertaken in accordance with the OMP and must comply with Egyptian regulations.

5.12 Eating Areas

The Contractor shall designate eating areas which shall contain bins with lids and cooking facilities, if necessary. Eating outside of these designated areas is prohibited. The feeding, or leaving of food for wild or domestic animals is strictly prohibited.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

5.13 Ablution Facilities

Ablution facilities will be provided by the Contractor for all staff. Ablution shall be limited to these facilities only.

5.14 Solid Waste Management

All solid waste shall be disposed of in accordance with the EEAA waste disposal regulations and in accordance with the Waste Management Plan.

5.15 Contaminated Water

The Contractor shall set up a contaminated water management system in accordance with the pollution prevention measures in the WMP.

5.16 Air Emissions

The Contractor shall ensure that:

- Unnecessary journeys are kept to minimum.
- A switching off of machinery and equipment policy is adopted.
- Low emissions equipment and machinery is procured and that such is equipment is well maintained throughout the construction period.
- Where possible, equipment and machinery with the lowest carbon footprint should be chosen.
- Air emissions comply with Egyptian Law and Lender requirements where applicable.
- Where practical, energy/fuel sources should be of the highest grade in order to reduce emissions and renewable sources should be given due consideration.

5.17 Dust

The Contractor shall be solely responsible for the control of dust.

The Contractor shall ensure that:

- All reasonable measures to minimise the generation of dust, as a result of construction activities, are taken to the satisfaction of the ECO including minimising unnecessary journeys, establishing hard surfaces for access roads and avoiding double handling.
- Where possible, soil (or other fine material) stockpiles shall be located in sheltered areas where they are not exposed to the erosive effects of the wind.
- Appropriate dust suppression measures shall be used during high dust or windy conditions e.g. dampening with water or the use of screening.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

- Wheel washing prior to leaving site if appropriate.
- Stabilisation methods such as using mulch, straw, etc. should be applied to areas where earthworks are complete and the area is left exposed.
- Prior to demolition appropriate asbestos surveys are to be undertaken.

5.18 Noise

The Contractor shall ensure that:

- Noise levels are limited (e.g. install and maintain silencers on machinery and /or use of barriers) and such equipment or machinery is located away from built up areas as much as possible.
- Appropriate directional and intensity settings are to be maintained on all hooters and sirens.
- No amplification equipment shall be allowed on site.
- Working hours are restricted, particularly for intrusive works such as piling, and that operations are minimised. During such work, timely notification of surrounding communities is required.
- Machinery and equipment is maintained regularly.
- Monitoring is conducted in accordance with Appendix 11 “The Environmental Monitoring Plan”.

5.19 Light

Implement measures to minimise social disturbances from light, e.g. limit transport of construction materials and construction activities to daylight hours.

5.20 Access Roads

Only roads and tracks allocated as access roads shall be used.

The Contractor shall ensure that:

- The movement of all vehicles and plant (including that of the suppliers) is controlled so that they remain on designated routes, are distributed so as not to cause an undue concentration of traffic, all relevant laws are complied with and the ERC Transport Management Plan is followed.
- In addition, such vehicles and plant shall be so routed and operated as to minimise disruption to regular users of the routes not on the site.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD**

APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN

5.21 Fire Control

No fires may be lit on site, other than in designated areas. A Fire Officer shall be appointed by the Contractor and shall be responsible for establishing a fire drill, fire procedures and ensuring that all fire-fighting equipment is readily accessible and in good working order.

Any fires that occur shall be reported to the ECS immediately.

Smoking is prohibited within the Project site area.

5.22 Access to Site

The Contractor shall ensure that the various work sites and associated infrastructure and equipment is off-limits to the public (especially children) at all times during construction. Additional areas restricted to the public and suggested detours shall be clearly marked on information boards to the satisfaction of the ECO. Any access to site that may pose a danger to the public must be suitably provided with warnings.

Vehicles leaving the site shall not deposit/shed mud, sand and debris onto any public road.

5.23 Other Construction Activities

In the event that any of the following activities shall be carried out during the construction phase of the Project, these activities will be undertaken in accordance with the Contractors EMS to the extent that they do not inflict environmental harm or social disturbance:

- Cement and Concrete Batching;
- Crushing;
- Earthworks; and
- Power Tools.

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN**

Table 1 Environmental and Social Training Register

Egyptian Refining Company - Hydro-Cracking Complex Project, Mostorod

Construction Environmental and Social Action Plan: Environmental and Social Training Register

Contract Title:

Contract No:

Date	Company	Employee Name	Employee Signature	Supervisor	Supervisor Signature
------	---------	---------------	--------------------	------------	----------------------

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN**

Table 2 Environmental and Social Incidents Register

Egyptian Refining Company - Hydro-Cracking Complex Project, Mostorod

Construction Environmental and Social Action Plan: Environmental and Social Incidents Register

Contract Title:

Contract No:

Date	Reference Number	Incident	Action Required	Responsible Person	Action Implemented	Date of Implementation	Checked by ECO
------	------------------	----------	-----------------	--------------------	--------------------	------------------------	----------------

**EGYPTIAN REFINING COMPANY
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
ERC HYDRO-CRACKING COMPLEX PROJECT AT MOSTOROD
APPENDIX 12.5 – CONSTRUCTION-RELATED MANAGEMENT PLAN**

Table 3 Environmental and Social Complaints Register

Egyptian Refining Company - Hydro-Cracking Complex Project, Mostorod

Construction Environmental and Social Action Plan: Environmental and Social Complaints Register

Contract Title:

Contract No:

Date	Reference Number	Complaint received	Action Required	Responsible Person	Action Implemented	Date of Implementation	Checked by ECO
------	------------------	--------------------	-----------------	--------------------	--------------------	------------------------	----------------
