

## Appendix D: Environmental and Social Management and Monitoring Plan

### D.1 Introduction

The Environmental and Social Management and Monitoring Plan (ESMMP) for the Environment and Social Impact Assessment (ESIA) summarises the organisational requirements, actions and monitoring plans that must be carried out by Waterway Trading & Petroleum Services LLC (WTPS) and their representatives, in order to meet the following objectives:

- to prevent negative impacts from occurring;
- to minimise the residual impacts to levels which are deemed acceptable; and
- to operate in conformance with National legislation as well as international best practice such as the policies of the International Finance Corporation (IFC).

The measures that are specifically outlined in this ESMMP are based upon the information gathered regarding baseline environmental and social conditions at and around the Project Site as described within the ESIA. Additionally, discussions with stakeholders were taken into consideration whilst defining these measures.

The ESMMP is a strategy that continues throughout the project life-cycle i.e. it covers both the construction and operational phases of the project. It is important that the ESMMP is flexible and is subject to frequent review and update.

An ESMMP is a comprehensive document that outlines operational policies, procedures and practices. WTPS holds the ultimate responsibility for its implementation, although specific responsibilities will be ultimately discharged by various third-party organisations. In order to ensure the stated actions are complied with WTPS will supervise and monitor third-party contractors.

The ESMMP has been compiled after consideration of, but not limited to, international standards and guidelines such as the IFC Performance Standards and the Equator Principles.

<b>Table D.1: ESMMP Principal Standards</b>	
<b>Equator Principles III</b>	<b>IFC Performance Standards (2012)</b>
Principle 1: Review and Categorisation*	Performance Standard 1 – Assessment and Management of Environmental and Social Risks and Impacts

<b>Table D.1: ESMMP Principal Standards</b>	
<b>Equator Principles III</b>	<b>IFC Performance Standards (2012)</b>
Principle 2: Environmental and Social Assessment	Performance Standard 2 – Labour and Working Conditions
Principle 3: Applicable Environmental and Social Standards	Performance Standard 3 – Resource Efficiency and Pollution Prevention
Principle 4: ESMS and Equator Principles Action Plan	Performance Standard 4 – Community Health, Safety, and Security
Principle 5: Stakeholder Engagement	Performance Standard 5 – Land Acquisition and Involuntary Resettlement*
Principle 6: Grievance Mechanism	Performance Standard 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources
Principle 7: Independent Review*	Performance Standard 7 – Indigenous Peoples*
Principle 8: Covenants	Performance Standard 8 – Cultural Heritage*
Principle 9: Independent Monitoring and Reporting	
Principle 10: Reporting and Transparency	
<b>Note:</b>	
* Requirements are not considered applicable to this project	

## D2. Project Environmental and Social Systems

Measures are to be taken by WTPS throughout the entire life-cycle of the Project in order to ensure that the ESMMP is complied with. The measures that are to be taken are based around the following categories:

- Organisation and arrangement;
- Contractor Management Plan; and
- ESMMP Performance Monitoring.

### Organisational Arrangements

During the construction phase WTPS will have contracted the responsibility for construction to a single turnkey Engineering, Procurement and Construction (EPC) Contractor and this will include full

compliance with the recommendations of the EISA, however, the overall responsibility for environmental and social compliance will remain with WTPS. In this regard an Environmental and Social Management System (ESMS) will be established by WTPS's EPC Contractor and approved by WTPS for the construction phase. The ESMS will include a Health, Safety and Environment Plan/Manual comprising the following elements (as a minimum):

- Scope of ES Management System;
- Health Safety Environment and Social Policy;
- Environmental and Social Aspects And Impacts;
- Legal and Other Requirements - likely to be developed from Chapter 4 – Policy, Legal and Administrative Framework of this ESIA and the Commitments Register as presented in *Appendix E*;
- Objectives, Targets and Management Plans;
- Organisational arrangements (*i.e.* roles and responsibilities);
- Competence, Training and Awareness;
- Communication procedures;
- Control of Project Documentation;
- Operational Control (*i.e.* work instructions, procedures management plans *etc.*);
- Emergency Preparedness and Response;
- Monitoring and Measurement (including compliance assessment);
- Non-Conformity, Corrective Action and Preventive Action;
- Control of Records;
- Internal Audit; and
- Management Review

Contractors working on the project shall revise their HSE Plans (where required) to ensure compliance with the WTPS Plan/ESMS Manual. The requirements above may well be met by existing management systems, policies and procedures used by the EPC Contractor or WTPS and do not necessarily need to be developed specifically for this project where such systems already exist.

**Contractor Management Plan**

WTPS will (at all times) retain responsibility for the Project and the implementation of the ESMMP. Contractors will be utilised both during the construction and operational phases of the Project with various magnitudes of responsibility, yet the one with the greatest responsibility will be the EPC contractor during the construction phase. A Contractor Management Plan (CMP) will be executed by WTPS to make certain that contractors are fully aware and compliant with the specifics of the ESMMP.

The main components of the CMP will include the following:

- Assignment and designation of those responsible for the implementation of the CMP from the senior managers of WTPS;
- Training sessions and awareness promotion activities focussing on the requirements of the CMP;
- The Specific the relevant ESMMP provisions, including requirements regarding occupational health and safety, will be included in the tender documents;
- The contractor's ability to fulfil ESMMP requirements *i.e.* sufficient skills, experience and competence will be examined as a main criterion and employed when awarding tenders;
- Each and every contract that is made will incorporate requirements regarding the relevant environmental and social risks and ESMMP requirements which are associated with the contract activities. Furthermore, they will incorporate non-compliance processes and mitigation measures (when deemed appropriate). Additionally, all contracts will stipulate that all subcontractors will be held accountable to obligations which are similar to those of the main contractor;
- All contractors will be required to ensure that all staff members are trained and skilled in the appropriate EHS topics and all activities are completed in accordance with both the Iraqi legislation and international best practices;
- The contractor will be required to demonstrate the skills, qualifications and/or working experience of his staff and sub-contractors to WTPS. The construction work force and subcontractors shall receive comprehensive H&S training at the beginning of their assignment and then on a regular basis thereafter;
- In the event that international firms are contracted and foreign workers will be involved in the project special attention shall be given to ensure that not only all Iraqi laws and regulations are followed but also relevant international ones (e.g. the international labour organisation core labour standards, working hours, overtime compensation, etc.); and

- It is the duty of WTPS to routinely monitor the performance of the contract with respect to their fulfilment of the ESMMP obligations.

### **Construction Environmental Management Plan (CEMP)**

It has been asserted throughout the ESIA that environmental protection and pollution prevention will be managed via the implementation and enforcement of a Construction Environmental Management Plan (CEMP). This will set out specific procedures, protocols and protective measures to ensure that construction activities do not cause significant environmental impacts and that unexpected contamination (if encountered) is properly managed. Table D2 Mitigation and Management column identifies the various aspects of the construction programme that should be addressed by the CEMP.

### **ESMMP Performance Monitoring**

It is the requirement that regular ESMMP audits are undertaken throughout the life of the Project. The audit schedule should be appropriate to the prevailing environmental and social risks posed by the Project. The ESMMP audit results shall be documented and reviewed by a senior responsible person at WTPS.

The ESMMP audit reports shall cover the status of EHS related aspects like permit compliance, non-compliance with regulatory environmental standards, root cause analysis, corrective actions as well as conformance with the ESMMP. The audits must address the performance of WTPS and any contractors and/or sub-contractors. Depending on the findings, it may be necessary to revise the original ESMMP to reflect the changing situation and/or the prevailing social environmental audit regulatory framework conditions.

## **D.3 Specific Mitigation and Monitoring Requirements**

The specific recommended mitigation measures for stage of the project are outlined in the environmental management and monitoring matrix (*Table D2* and *Table D3*). For each item the following information is provided:

- key activities/aspects which could result in a potential impact;
- potential significant impacts of the activities;
- recommended mitigation measures;
- key performance indicators (KPIs); and
- residual impacts.

The matrix outlines specific KPIs for environmental and social performance. The contractors' plans will ensure that monitoring data is gathered and reported to WTPS.

Audits will be undertaken to track progress and performance in implementing the commitments and effectiveness of the mitigation measures. The audits will also highlight any corrective actions required.

#### **D.4 Operations Phase ESMS**

WTPS shall operate the Terminal using an environmental and social management system that is either aligned to or certified to ISO 14001.

As with the construction ESMS, the operational ESMS will provide details on the operation of the Terminal in accordance with relevant legal, regulatory and WTPS policies and standards and to implement the commitments made within the ESIA.

It will be developed prior to commencement of operations and transition plans will be developed to assist in the move from construction to operational phases.

**Table D2: Construction Phase – ESMMP Matrix**

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
<p>Site preparation and excavation (earthworks)</p> <p>Movement of vehicles and construction machinery</p>	<p>Dust</p>	<p>Ensure adequate water supply on site for damping down dust.</p> <p>Wheel washing at the exits from construction areas where there is a potential for dust and mud to be carried on to the highway.</p> <p>Regular visual monitoring of construction activities to identify any significant dust sources.</p> <p>Water suppression in dry conditions to reduce dust emissions (use of mobile bowsers or fixed sprayers as appropriate).</p> <p>Appropriate speed limit applied to all construction vehicles working on the construction site.</p> <p>Minimising heights for any stockpiles and tipping operations.</p> <p>Avoid double handling of excavated material wherever practicable.</p>	<p>EPC</p>	<p>Site observations.</p> <p>Monitoring of PM10 dust emissions.</p> <p>Number of complaints.</p>	<p>Low level dust emissions will remain even after implementation of proposed control measures.</p> <p>Significant impact unlikely.</p>

<b>Table D2: Construction Phase – ESMMP Matrix</b>					
<b>Activity/Aspect</b>	<b>Impacts</b>	<b>Mitigation and Management</b>	<b>Responsibility</b>	<b>Monitoring and KPIs</b>	<b>Residual Impacts</b>
		Seal or re-vegetate completed earthworks as soon as reasonably practicable after completion.  Sheeting of loads during transport of dusty/friable material.  Ensure deliveries of bulk cement and other similar powder materials are in enclosed tankers and stored in suitable silos with emission control systems to prevent escape of material and overfilling during delivery.  Soils management plan.			



**Table D2: Construction Phase – ESMMP Matrix**

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
Movement of vehicles and construction machinery	Gaseous pollutants as a result of combustion	<p>Exhaust emissions from vehicles should be checked as per local requirements.</p> <p>All plant and equipment to be maintained in accordance with appropriate legislation or manufacturers recommendations to ensure emissions to atmosphere are minimised.</p> <p>Engines of plant and machinery and lorries to be turned off at all times when not in use.</p> <p>No burning of material to take place.</p>	EPC	<p>Site observations.</p> <p>Vehicle maintenance records.</p>	<p>Emissions will remain even after implementation of proposed control measures.</p> <p>Significant impact unlikely.</p>
Handling of wastewater	Pollution of adjacent surface water systems	<p>Appropriately designed facilities and systems (<i>i.e.</i> septic tanks, excavation dewatering systems <i>etc.</i>).</p> <p>Wastewater treated prior to discharge</p> <p>Compliance with Standard Operating Procedures (SOPs)</p>	EPC	Visual observations of unplanned releases.	None

<b>Table D2: Construction Phase – ESMMP Matrix</b>					
<b>Activity/Aspect</b>	<b>Impacts</b>	<b>Mitigation and Management</b>	<b>Responsibility</b>	<b>Monitoring and KPIs</b>	<b>Residual Impacts</b>
		Planned Preventive Maintenance (PPM) systems			
Storage and handling of fuels and hazardous materials	Soil and groundwater contamination	Appropriately designed facilities Primary, secondary and tertiary containment system designed to international industry standards. Compliance with SOPs PPM systems Emergency plans, procedures and equipment	EPC	Site observations Number of unplanned releases ( <i>i.e.</i> reported leaks and spills)	None.
Handling and storage of waste materials	Soil and groundwater contamination	Removal of any construction generated waste ( <i>i.e.</i> no local burning or disposal) Works undertaken in compliance with local and international standards with regards to waste management Training	EPC	Site observations Number of non-compliances	None
Transportation of construction materials to site	Increased air emissions and road traffic	Minimise journeys (minimise local disruption to the road network)	EPC	Site observations	None

<b>Table D2: Construction Phase – ESMMP Matrix</b>					
<b>Activity/Aspect</b>	<b>Impacts</b>	<b>Mitigation and Management</b>	<b>Responsibility</b>	<b>Monitoring and KPIs</b>	<b>Residual Impacts</b>
		Ensure effective journey planning			
Resource use ( <i>i.e.</i> water, fuels, aggregates <i>etc.</i> )		Minimise resource use as far as is reasonably practicable (including energy) Ensure effective journey planning	EPC	Site observations	None
Site works leading to ecological disturbance	Disturbance or loss of wildlife	Training Habitat and species protection (where identified during the works) Monitoring and reporting	EPC	Site observations Number of non-compliances	None
Site works leading to noise and vibration	None identified (non-sensitive location)	Compliance with SOPs	EPC	Site observations	None
Community Health, Safety and Security		Worker-community interaction Management of construction site Traffic safety	EPC	Site observations. Audits No. of complaints	None

**Table D3: Operational Phase – ESMMP Matrix**

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
Movement of vehicles and construction machinery	Dust	<p>Ensure adequate water supply on site for damping down dust.</p> <p>Regular visual monitoring of activities to identify any significant dust sources.</p> <p>Sheeting of loads during transport of dusty/friable material.</p>	WTPS	<p>Site observations.</p> <p>Number of complaints.</p>	<p>Low level dust emissions will remain even after implementation of proposed control measures.</p> <p>Significant impact unlikely.</p>
Movement of vehicles.	Gaseous pollutants as a result of combustion	<p>Exhaust emissions from vehicles should be checked as per local requirements.</p> <p>All plant and equipment to be maintained in accordance with appropriate legislation or manufacturers recommendations to ensure emissions to atmosphere are minimised.</p> <p>Engines of plant and machinery and lorries to be turned off at all times when not in use.</p> <p>No burning of material to take place.</p>	WTPS	<p>Site observations.</p> <p>Vehicle maintenance records.</p> <p>Number of complaints.</p>	<p>Emissions will remain even after implementation of proposed control measures.</p> <p>Significant impact unlikely.</p>

<b>Table D3: Operational Phase – ESMMP Matrix</b>					
<b>Activity/Aspect</b>	<b>Impacts</b>	<b>Mitigation and Management</b>	<b>Responsibility</b>	<b>Monitoring and KPIs</b>	<b>Residual Impacts</b>
Venting from tanks, (onshore and vessels)	Release of VOCs to the local environment	Compliance with SOPs	WTPS	Compliance with SOPs Audits and inspections	Emissions will remain even after implementation of proposed control measures. Significant impact unlikely.
Vessel based emissions	Gaseous pollutants as a result of combustion	Compliance with SOPs	Vessel operator WTPS	Site observations Audits and inspections	Emissions will remain even after implementation of proposed control measures. Significant impact unlikely.
Poor housekeeping within the terminal <i>e.g.</i> leaks and spills.	Release of fuels and oils to ground	Primary, secondary and tertiary containment system designed to international industry standards. Compliance with SOPs PPM systems Training, awareness and competence	WTPS	Site observations Audits and inspections	None

**Table D3: Operational Phase – ESMMP Matrix**

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
Spillage during transfer of petroleum products from marine tankers to tanks	Pollution of surface water and sediments	Facility design standards Compliance with SOPs Emergency plans, procedures and equipment	Vessel operator WTPS	Site observations Audits	None
Handling of wastewater	Pollution of surface water	Facility design standards Compliance with SOPs Emergency plans, procedures and equipment	WTPS	Audits	None
Handling and storage of waste materials	Soil and groundwater contamination	Removal of any operational wastes (i.e. no local burning or disposal) Process and procedures in compliance with local and international standards with regards to waste management	WTPS	Site observations Audits Number of non-compliances	None