Chapter 11 – Conclusions and Summary

Contents

11 Summary and Conclusions

11.1 Introduction

The ESIA report that is presented in the preceding chapters gives an account of the proposed project and its potential impacts for each aspect of the environment that might be affected by the proposals.

This chapter summarises those findings and draws an overall conclusion on the potential impacts of the proposed development.

11.2 Project Description

The Terminal will provide berthing facilities, storage infrastructure, truck loading/unloading facilities and all associated utility and support systems for multiple berths capable of discharging vessels up to 47,000 deadweight tonnage (DWT). The construction of the terminal will be phased: the first phase being a single Deeper Water Berth (DWB) and associated pipeline connection to the existing SKA Terminal. Subsequent additional phases will include storage tanks and associated utilities, with a potential storage capacity of up to 300,000m^3. The Terminal will be constructed to the appropriate international industry standards using reliable and proven technology and will be operated in accordance with standards and practices generally prevailing in the petroleum marine terminal and storage industry.

An indicative layout of the Terminal is presented in *Figure 11.1*. It should be noted that this is based on current state of knowledge and ground conditions and may be subject to change as more detailed design studies take place. The overall concept is not expected to change significantly any material environmental impact however.

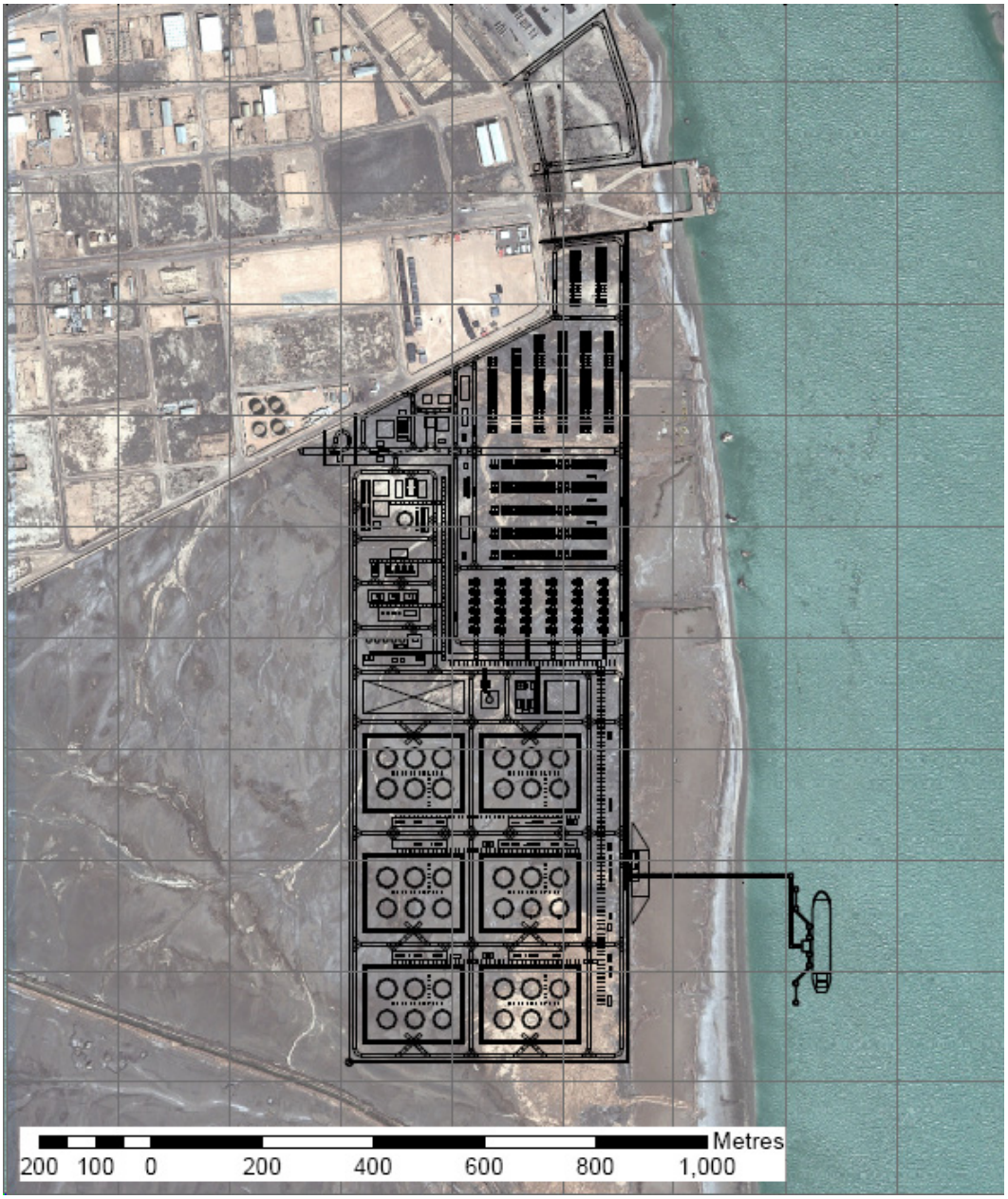

Figure 1.1: *Conceptual Development Layout*

11.3 Current Site Conditions

The majority of the site, approximately 95%, is undeveloped and vacant with sparse halophytic vegetation, unsurfaced access roads and evidence of fly-tipped waste. There is evidence of disturbance of some of the soils by heavy plant and some accumulations of earth mounds from earthworks activities. Also there is an earth bank road running along the site parallel to the shoreline with two smaller earth bank roads extending to the water line.

The northern elevation of the site comprises KAZ Jetty No. 1 and areas of unsurfaced, derelict land with areas used for the storage of scrap metal, much of which appears to be marine-derived (ship wreck clearance). It is understood that the majority of the site has never been developed.

The baseline studies have determined that on the whole the site and its immediate environment in terms of air quality, water quality, sediment quality, etc whilst disturbed is not significantly polluted. It is also true, however, that the site is of low ecological value and sensitivity.

Similarly there are no residential communities or agricultural or fishing communities close to the site or that rely on it for access or economic subsistence.

Overall, therefore, it can be concluded that the site is of low environmental and social significance and sensitivity in its present state.

11.4 Project Impacts Matrix

Table 11.1 presents each of the aspects of the development where potential impacts were predicted during the Scoping Exercise and subsequently assessed during this ESIA. The table provides an overview of the following aspects of each technical area assessed:

- Baseline environmental conditions;
- Predicted environmental impacts for both the construction phase and operational phase;
- Identification of the relative magnitude of the impact for both the construction and operational phases; and
- Identification of whether the predicted impact is positive or negative or whether there is no predicted impact.

The predictions are all based upon a comparison of the conditions that would prevail if the development does not proceed (i.e. the ongoing status of the baseline conditions) against those that will prevail if the development does proceed as described.

Table 11.1: Project Impacts Matrix

Environmental or Socio-economic Issue	Baseline Conditions	Description of Impact (After Mitigation)	Relative Size and Nature of Impact	
			Construction Phase	Operational Phase
Socio-economic Issues	There is presently no employment associated with the site or activity on the site and there are no residential communities or cultural sensitivities associated with the land or surrounding areas. There are occasional visitors to the site, for example, local fishermen use the land to access the Khor Al-Zubair and deploy fishing nets. Adjacent to the site is the Freezone (logistics and SKA Terminal) and KZP.	The Terminal would provide jobs during the construction and operational both directly and in terms of benefits to local businesses. The traffic impact is unlikely to be significant as the volume of required products will be driven by demand and there are no alternative locations for the import of such products so even if this development did not proceed, there would probably be a similar amount of marine and road traffic in the local area and at the same junctions. The fishermen that presently access the shore from the site will no longer be able to do so once it is developed, but there are numerous other locations where this practice can continue unaffected. The local fishermen were interviewed as part of the stakeholder engagement exercise and did not see the development as affecting their activities. Overall the impacts on the socio-economic conditions	+	+++

Table 11.1: Project Impacts Matrix

Environmental or Socio-economic Issue	Baseline Conditions	Description of Impact (After Mitigation)	Relative Size and Nature of Impact	
			Construction Phase	Operational Phase
		would be positive in terms of job creation and support to the general economy of southern Iraq.		
Archaeology and Cultural Heritage	The site does not contain any archaeological or religious relicts and is not culturally significant and there are no dwellings or residential communities in close proximity to the site. The surface of the site has been heavily disturbed in the past by earth moving plant (and possibly dredgings disposal).	As there is effectively no baseline to be affected for this parameter the impact would be neutral.	**o**	**o**
Air Quality	Air quality in the area is generally good with no noted benchmark values exceeded. The main issue with respect to air quality is the increase in breathable dust caused by dust and sand storms, but this affects the whole region and is not a site specific phenomenon.	Impacts of the construction on both nuisance dust and local air quality have been assessed with regards to the location of locally sensitive receptors. Whilst the construction activities (especially earth moving) have the potential to cause local nuisance, this can be controlled and minimised by effective environmental management on the site. The works would be carried out in accordance with a Construction Environmental	**o**	**o**

Table 11.1: Project Impacts Matrix

Environmental or Socio-economic Issue	Baseline Conditions	Description of Impact (After Mitigation)	Relative Size and Nature of Impact	
			Construction Phase	Operational Phase
		Management Plan (CEMP). The impacts during the construction phase are thus predicted to be moderate to minor at all receptors if not adequately controlled but insignificant with the implementation of a CEMP and the associated. Impacts during the operational phase are predicted to be insignificant.		
Noise	The site presently does not contain any activities so in that regard there are no noise sources resulting from human activities on the site. Furthermore, there are no noise sensitive receptors in close proximity to the site.	Noise levels from the construction of the development could arise, although there are no sensitive receptors close by. Nonetheless there will be noise sources on the site that do not exist presently. Impacts are predicted to be of local significance, however with the implementation of mitigation measures and a CEMP, noise and vibration impacts, which will be for short durations only and will not be continuous. They could be noticeable however and are considered to represent a minor negative impact. The noise impacts from road traffic during the	-	o

Table 11.1: Project Impacts Matrix

Environmental or Socio-economic Issue	Baseline Conditions	Description of Impact (After Mitigation)	Relative Size and Nature of Impact	
			Construction Phase	Operational Phase
		construction are not considered to be significant, with the estimated levels of noise from construction haulage at the nearest noise receptor being well below the respective noise criteria at the nearest residential properties. The impacts from road traffic during the operational phase are considered to be insignificant given that there is very little difference between the vehicle traffic accessing KZP and that accessing the new facilities instead. The road traffic noise that prevails at present will continue to be the road traffic noise that dominates in the future at the closest residential receptor. Once operational, the predicted noise emissions generated within the proposed development from mechanical services, plant and day to day operations is predicted to be insignificant to the nearest residential receptors.		
Ecology and	The development site does not support a wide variety of	There will be a loss of habitat such as it is on the areas	**o**	**o**

Table 11.1: Project Impacts Matrix

Environmental or Socio-economic Issue	Baseline Conditions	Description of Impact (After Mitigation)	Relative Size and Nature of Impact	
			Construction Phase	Operational Phase
Nature Conservation	ecological species and is not so important from a nature conservation perspective. The majority of the site is occupied by disturbed ground and patches of sabkha vegetation. The Inter-tidal area houses mudskipper colonies (which are ubiquitous along the banks of the Khor Al-Zubair). The most interesting feature of the site is its potential as a site for wading birds, although only a handful of birds have been observed on the site during any of the survey visits. The waters of the marine environment are highly turbid are likely to have low biological productivity and species diversity. Overall the project site is considered to be of low ecological value.	where new infrastructure will be developed, but the species affected (sabkha vegetation and mudskippers) are abundant and will rapidly recolonize in adjacent areas so the overall impact will be neutral.		
Water Quality and Hydrology	The water quality in both the surface water and groundwater is relatively un-impacted by human	The site construction activities would be managed under a CEMP and pollution of waters is not anticipated.	**o**	**o**

Table 11.1: Project Impacts Matrix

Environmental or Socio-economic Issue	Baseline Conditions	Description of Impact (After Mitigation)	Relative Size and Nature of Impact	
			Construction Phase	Operational Phase
	activities (other than coliforms in the surface water). The groundwater is highly saline due to the marine nature of the environment and land forming processes there and the Khor Al-Zubair is a tidal estuary. Although the area has been a site of armed conflict, there was no development and infrastructure here to be damaged and release pollutants so the set presently does not pose a pollution threat to surface and groundwater resources.	Furthermore, water required for the operational activities will be brought in by tanker and not abstracted locally. Under normal operating conditions, all polluting materials will be within managed and monitored containment systems so pollution from site activities is not anticipated.		
Soils, Geology and Contamination	The site investigation has not identified any significant contamination on the site in either the soils or sediments (although there are some elevated metal species present). This is not unexpected as there have been no polluting activities on the site to date (other than localised storage of vessel scrap which may have led to some localised surface contamination). The geology of the area is relatively consistent	Based on the site investigation findings, specific remedial measures will not be required on the site and the development overall will have a minor positive impact by removing the few contaminants and waste materials that are present to an appropriately authorised facility. Following redevelopment, the site will be under predominantly hard-standing with controlled drainage such that any spillages or releases should be contained	**o**	**+**

Table 11.1: Project Impacts Matrix

Environmental or Socio-economic Issue	Baseline Conditions	Description of Impact (After Mitigation)	Relative Size and Nature of Impact	
			Construction Phase	Operational Phase
	comprising sands, silts and clays.	and pollution of the soils avoided.		
Waste Management	The site does not presently generate any wastes from activities per se, but there are large quantities of scrap metal on the site from shipwrecks and debris on the foreshore that has been deposited by tides. There is also evidence of asbestos cement sheet (isolated fragments) amongst the scrap metal waste.	The project would generate wastes. The site works will be covered by a CEMP which, amongst other things, will seek to identify all wastes generated by the construction activities and set out management measures for these. To ensure adequate standards of waste management during the operations, a facility Waste Management Plan would be developed and implemented which will set out the appropriate measures to be employed for the management and disposal of wastes and pollution prevention. Although significant impacts are not expected from waste generating and management activities on the site, the fact that the site does not presently generate any waste but would in the future is a minor negative impact.	-	-

KEY: - Negative Impact, + Positive Impact -/+ Minor Impact - -/++ Moderate Impact - - -/+++ Major Impact o Insignificant Impact

11.5 Conclusions

The Terminal development proposals have been assessed in relation to their potential to impact upon the environmental conditions that currently prevail on the site and in the surrounding area. This assessment has considered the environmental quality and sensitivity of the area around the proposal site.

The environmental impacts of the construction of the project are typically minor and negative and are largely a function of the inevitable disruption caused by a major redevelopment project and especially the initial earthworks phases which are unavoidably intrusive. The long lasting/permanent impacts associated with the development are, on the whole, either neutral (environmentally insignificant) or, more frequently positive.

The most notable impact is the major positive impact related to job creation and contribution to the Iraqi economy. In overall terms then, the principal conclusion of the ESIA is that despite some localised, temporary negative impacts, the overall effect of the development will be positive in terms of socio-economic benefits.

The mitigation and enhancement measures that have been proposed in the ESIA to reduce adverse impacts (and enhance potential benefits) have been captured in a Commitments Register. The commitments that relate to the operating phase of the Terminal will be incorporated into the Environmental and Social Monitoring and Management Plan (ESMMP).