

LIQUID WASTE TREATMENT FACILITY – MENDIS ROAD, HUDSON CREEK

DRAFT GUIDELINES FOR A PUBLIC ENVIRONMENTAL REPORT

Introduction

The purpose of this Public Environmental Report (PER) is to provide the Government with concise and comprehensive information regarding the design, construction and operation, and the potential environmental impacts of the proposed development. This PER will specifically focus on the environmental impact of the proposed development on its immediate surrounds.

1. Executive Summary

The executive summary should be a concise outline of the matters discussed in the main body of the document, to allow the reader to quickly obtain a clear understanding of the proposal, its environmental implications and management objectives. The summary should include:

- the title of the proposal;
- name and address of the proponent;
- a brief description of the background to and need for the proposal;
- a brief description of the proposal;
- a brief summary of the principal environmental impacts;
- a statement of the proposed environmental management principles and monitoring procedures;
- a brief explanation of the structure and scope of the PER and its legislative basis; and
- a description of the studies / surveys / consultations conducted in developing the proposal and preparing the PER (results of studies and detailed comments resulting from the consultation should be included as appendices).

2. Description of the Proposal

This section should describe the development in sufficient detail to provide an adequate understanding of infrastructure design and engineering, all stages of construction, operation and management of the Liquid Waste Treatment Facility. Drawings, plans and maps should be used where appropriate.

Aspects to be covered include, but should not be limited to:

Location and Design Requirements

- Location of development and alternative sites considered.
- Land tenure and additional planning issues.
- Design layout and standards, including offices, storage tanks, roads, treatment units,

- ponds, parking facilities, drainage works, pipelines, buffers and firebreaks etc.
- Design limitations imposed by site characteristics including adjacent land use, storm surge, and weather variables including cyclonic force and multi-directional winds.
- Design considerations for the management of biting insects in bunded areas.
- Expected lifetime of the proposal.
- Landscaping.
- Outline tank design for corrosion control.

Construction Phase

- Construction program (timing and duration).
- Physical requirements for construction (to include the nature of earthmoving, blasting and sources of fill and construction materials, supplies of water, cement, aggregate).
- Sourcing and transport of construction materials including heavy vehicle movement (numbers and frequency) on public roads.
- Construction standards, techniques, site management and supervision (including on-site storage and handling of materials).
- Construction wastes and disposal methods.
- Extent and methods of any vegetation clearance and site preparatory works.
- Soil conservation, rehabilitation and erosion prevention measures, for example, areas and access tracks used during the construction phase, but not required during operation.
- Stormwater construction practices and management to rectify existing mosquito habitats and minimise the potential for the creation of new breeding areas for mosquitos.
- Dust control methods.

Operational Phase

- Description of the liquid wastes to be treated at the facility, including testing and assessment of suitability for treatment. Safety management, including storage should be addressed regarding the potential hazards of these wastes.
- Description of the treatment processes, including the separation procedures for wastes of different contamination levels.
- Details of the type of chemicals to be used on site with relevance to storage and safety management.
- Description of end products, including solids and laboratory wastes, and the associated methods of disposal or reuse. The current availability of landfill sites and other receptor facilities to take these wastes (eg PAWA ponds) should be addressed.
- Details of any manifest system and how it will ensure full tracking of wastes from cradle to the grave.
- Description of the types of potential pollutants to be emitted from the operation, their sources and estimations of the quantities likely to be emitted to air, land and water. Details of practices and facilities to minimise or eliminate emissions should be included.
- Description of high-pressure water blasting of ships hulls, containers and tankers, including details of procedure location, treatment and/or disposal of wastewater and solids generated and potential emissions to air which may result.
- Details of fume ventilation, monitoring and control, taking into account the potential for explosive and hazardous fumes. Odour control and monitoring should also be addressed.
- Measures used to detect and control leakages from tanks and lines.

- Transport, storage and handling of the liquid wastes including transfer from ship to transport vehicles, from vehicles and throughout the site.
- Timing of normal operations of facility.
- Maintenance requirements and operations. Additional storage facilities required for periods of maintenance should be addressed
- Predictions of stormwater flow and containment around and off site during the wet season (these should be designed to an Exceedence Probability such as 1 in 10 year or 1 in 100 year storm events).
- Description of cyclone procedures.
- Ongoing measures proposed to minimise the potential for mosquito breeding on site and any off site locations that may be affected by the proposal (this should include methods for ensuring receptacles are free of larvae and eggs etc).
- Contingency plans for handling wastes received which may not be suitable for treatment, or ways in which such a situation could be avoided.
- Contingency planning should address procedures to be implemented due to failure of the plant or parts of the plant.

3. Existing Environment

Describe the existing environment that may be affected by the proposal including off site locations such as downstream mangroves and marine environment. Specific aspects of the existing environment related to this proposal to be addressed should include, but should not be limited to:

- Topography.
- Seismic stability.
- Surface and sub-surface hydrology including, drainage patterns and catchment areas potentially at risk from spills.
- Soil characteristics (both physical and chemical).
- Terrestrial and other vegetation.

4. Environmental impacts

The discussion should cover impacts at a local level only. The text should cover impacts from both the construction and operational phases at the site. Generally the discussion should use the same descriptors used to describe the existing environment.

A preliminary hazard analysis and risk assessment for the new facilities is required, particularly since the new location has adjacent and nearby developments that are potentially hazardous to the operation of the Facility. Separate guidelines are included in Appendix A.

Types of impacts which should be considered include:

- Potential effects of spills and leakage of liquid wastes and other stored products. Contingency plans and proposed procedures for dealing with spills should be detailed. Specific reference should be made to evaporation pond containment during periods of extreme weather (see Appendix A).

- Potential effects of explosion and accidents, including accidental discharge of toxic fumes, particularly during the operational phase (see Appendix A).
- Effects of vegetation clearance and potential for increased soil erosion.
- Effects of increased run-off from hardstand areas and disposal of stormwater (including water quality impacts on the surrounding marine environment).
- Effects of noise and odour on surrounding land uses.
- Potential effects of project on visual amenity from Berrimah Road.
- Effects of increased traffic.
- Potential benefits or otherwise of placing pipework exposed with bunding as opposed to buried.
- Potential effects of evaporation of the liquid wastes and products on air quality (local and regional).
- Rehabilitation methods to be implemented and indication of necessary financial surety in case of closure of the liquid waste treatment facility.
- Potential impacts on wildlife resulting from direct access to the evaporation ponds. Methods of preventing access to ponds by wildlife, such as birds should be outlined.
- Impacts on sites of cultural significance. Provide evidence of an Authority Certificate under the Northern Territory *Aboriginal Sacred Sites Act* or the results of an inspection of the Register of Sacred Sites maintained by the Aboriginal Areas Protection Authority.

A summary table listing potential impacts, environmental management practices and safeguards, monitoring and management methods with cross-referencing to the text of the report should be provided together with the outline of an Environmental Management Plan (EMP). Details of how the EMP will be implemented should be provided.

An EMP should:

- Provide details of proposed measures to minimise adverse impacts and the effectiveness of these safeguards.
- Ensure that safeguards are being effectively applied.
- Enable remedial action for any impacts, which are not originally predicted ie contingency planning.
- Measure the differences between predicted and actual impacts (monitoring); and provide for the periodic review of the management plan itself.

5. Glossary

A glossary defining technical terms and abbreviations used in the text should be included to assist the general reader.

6. References

The reference list or bibliography should be accurate and concise.

7. Appendices

Information relevant to the PER but not suitable for inclusion in the main text should be included as appendices, for example detailed technical or statistical information, maps, baseline data, supplementary reports etc.

8. Administration

The Project Officer is Helge Pedersen of the Environment and Heritage Division, Department of Lands, Planning and Environment and can be contacted on telephone (08) 8924 4138 or fax (08) 8924 4053.

One copy of a “preliminary” draft PER should be lodged with the Environment and Heritage Division for internal review prior to its release for public and advisory body comment.

Once this internal review is finalised, **10 copies of the PER together with 2 CD rom** copies should be lodged with the Department of Lands, Planning and Environment for distribution to government advisory bodies. **CD rom** copies should be in ADOBE *.pdf format for placement on the Internet.

Arrangement for the public display, review and purchase of the PER, including locations and number of copies will be made at the time when the preliminary copy of the draft PER is reviewed.

APPENDIX A

HAZARD AND RISK ASSESSMENT FOR THE PROPOSED LIQUID WASTE TREATMENT FACILITY

The PER should include a preliminary hazard analysis and risk assessment for the risks to people and nearby facilities from potential accidents associated with the operation of the facility, storage and transport of materials to and from the facility. Contingency plans for dealing with spillages of any hazardous materials should be detailed.

The study should include:

Hazard identification

- Identification of the materials involved, quantities and their properties (flammability, toxicity, volatility etc);
- Identification of transport modes and routes of hazardous materials to and from the proposed facility and storage areas at the facility;
- Identification of the human populations at risk, vulnerable areas, hazardous facilities which might be affected by an accident; and
- Likely occurrences leading to potentially hazardous events originating both from the operation of the facility and external sources such as cyclones, earthquake, aircraft strike, sabotage etc.

Consequence analysis

- Estimation of the effects of potential hazards identified above eg explosions, fire tank rupture; predicted concentrations of hazardous material in air, water or soil; and the resultant effects on nearby populations and facilities/activities.
- Estimation of potential accumulative consequences should an accident at the facility trigger nearby hazardous developments to become unstable.

Frequency analysis

- Estimation of the likelihood (probability) of hazardous incidents occurring and the likelihood of particular outcomes if those events occur, having regard to all the proposed technical, organisational and operational controls.

Quantified risk assessment

- The overall risk associated with the proposal should be quantified by combining cumulatively the consequences and probabilities of hazardous events.

The acceptability of predicted risks should be based on established criteria and compared to the existing risk profile in the study area.