

CONTENTS OF DETAIL DESIGN REPORT FOR WASTE MANAGEMENT SYSTEM.

1. Basic Information

- 1.1 Island description
- 1.2 Demographic aspects
- 1.3 Generation of MSW in the island/s (or the designated zone)
- 1.4 Characteristics of MSW in the islands
- 1.5 Existing Waste Management System (If applicable)
- 1.6 Site Characteristics
- 1.7 Climate Conditions
- 1.8 Identification of Standards in force

2. Community Consultation

3. Design description of Waste Management Facilities

- 6.1 Design Scope
 - 6.1.1 Classification of the facility by scale
 - 6.1.2 Classification of the facility by type
- 6.2 General Design Parameters

4. Waste Treatment Facility Design Details

- 7.1 Design Flow Bases
- 7.2 Treatment Scheme
- 7.3 Process description
- 7.4 Waste Residue management
- 7.5 Process flow diagram
- 7.6 Emission Control systems (air/water)
- 7.7 Disposal System
- 7.8 Equipment list
- 7.9 Electrical & instrumentation

5. Design Criteria's calculations

- 8.1 Facility design calculations
 - 8.1.1 Type of waste collection System & collection equipment's sizing
 - 8.1.2 Facility sizing (15 Year design period)
 - 8.1.3 Storage compartment sizing
 - 8.1.4 Leachate Collection Well Sizing
- 8.2 Transfer Station
 - 8.2.1 Onsite roadways
 - 8.2.2 Tipping area (if applicable)
 - 8.2.3 Odor control mechanism
 - 8.2.4 Transfer route to transfer vehicles/vessels
 - 8.2.5 Proposed disposal site
 - 8.2.6 Onsite traffic control system
 - 8.2.7 Onsite queuing capacity shall be provided for the expected traffic
 - 8.2.8 Areas designated for unloading, storage compaction, and loading to larger transfer vessels hazardous waste containment system (if applicable)

- 8.2.9 Specification of all the machinery and equipment, vehicles
- 8.2.10 Vehicle/vessel parking area
- 8.2.11 Truck wash bay
- 8.3 Waste Incineration Facilities
 - 8.3.1 Stack height (design calculations)
 - 8.3.2 Processing rate of the facility
 - 8.3.3 The design of loading, unloading and storage areas and their capacities
 - 8.3.4 The expected daily quantity of waste residue generation
 - 8.3.5 Proposed ultimate disposal location (ash residue, bypass material, byproducts from air pollution control devices)
- 8.4 Compositing
 - 8.4.1 Handling area and equipment to segregate waste
 - 8.4.2 Area for mixing, composting, curing, screening and storing
 - 8.4.3 Leachate collection system
 - 8.4.4 Auxiliary power, standby equipment, or contingency arrangements
 - 8.4.5 Calculations for sizing of surface water control features uncovered sites (based on a rainfall intensity of one hour duration and a 10-year return period)
 - 8.4.6 Composting method
- 8.5 Anerobic Digestion/Biogas Production facility
 - 8.5.1 Design of digesters
 - 8.5.2 Gas collection facilities
 - 8.5.3 Gas utilization facilities
 - 8.5.4 Areas designated for unloading, storage, sorting out, processing, final product storage
 - 8.5.5 fire protection system / fire control system
 - 8.5.6 By-product management
- 8.6 Compaction
 - 8.6.1 Space for the waste bales to be stored
 - 8.6.2 Machinery and Equipment's used for compaction
- 8.7 Shredding
 - 8.7.1 Storage space for the machine and equipment
 - 8.7.2 Management of the shredded waste
- 8.8 Open Burning
 - 8.8.1 Justification for open burning
 - 8.8.2 Size and design of burning grill
 - 8.8.3 Location (based on wind patterns)
- 8.9 Disposal facility
 - 8.9.1 Calculation of the necessary volume
 - 8.9.1.1 Volume of solid waste
 - 8.9.1.2 Volume of the cover material (column 9)
 - 8.9.1.3 Volume of the sanitary landfill
 - 8.9.2 Calculation of the required area
 - 8.9.3 Design of slopes
 - 8.9.3.1 Earthworks
 - 8.9.3.2 Designation of slopes
 - 8.9.4 Selection of the fill method
 - 8.9.4.1 Ditch or trench method

- 8.9.4.2 Area method
- 8.9.5 Calculation of the useful life
- 8.9.6 Liner system
- 8.9.7 Leachate collection system
 - 8.9.7.1 Calculation of leachate generation
 - 8.9.7.2 Design of the leachate drainage system
 - 8.9.7.3 Leachate treatment system
- 8.9.8 Landfill gas monitoring and control system (if required)
- 8.9.9 Monitoring water quality
 - 8.9.9.1 Location of the monitoring wells
 - 8.9.9.2 Parameters for the analysis of waters and leachate
- 8.9.10 Proposed final cover system

- 6. Hazardous and special waste storage area**
- 7. Administrative/Office building**
- 8. Fencing, Gate and Gatehouse**
- 9. Roads, Traffic Routing and Parking**
- 10. Drainage/ Storm water management system**
- 11. Leachate collection and disposal system**
- 12. Utility services (power, water, and sanitation)**
- 13. Fire detection and fighting system**
- 14. Spill prevention and response system**
- 15. Estimated Operational cost**
- 16. Spares & Maintenance Tools**
- 17. Conclusion**
- 18. Annexes**

- 21.1 Approved Concept design report
- 21.2 Approved Topographic survey report
- 21.3 Waste Collection System Design and vehicles and equipment's
- 21.4 Spares and Maintenance Tools list
- 21.5 Location Approval Letter
- 21.6 Civil Structural Stamped drawings, PNID/ SLD stamped Drawings
- 21.7 Concept Design Approval Letter/ Email
- 21.8 EIA Decision Statement
- 21.9 O&M Training Outline
- 21.10 Power availability from Utility Service Provider
- 21.11 Construction Methodologies
- 21.12 Catalogs and brochures of equipment and materials

Note: These contents are for a general detail design report for Waste Management Systems in the Islands, and some of the information may not apply to commercial islands/resorts.