# WASTE MANAGEMENT

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<tr>
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<th>QPR- RHE – 002</th>
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<tr>
<td>ISSUE NUMBER</td>
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<td>Dr. MOHAMMAD ALBELDAWI</td>
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<td>APPROVED BY</td>
<td>Mr. MISNAD AL-MISNAD</td>
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## DOCUMENT CHANGE HISTORY
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<td>QPR - RHE - 002</td>
<td>02</td>
<td>15-05-05</td>
<td>Updated list of wastes definitions</td>
<td>5&amp;6</td>
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<td>Added waste reduction as part of waste management strategy (Item # 5.1)</td>
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<td>Added non-hazardous waste as part of waste management strategy (Item # 5.1)</td>
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<td>Separated Storage and disposal sections (Item # 5.3 &amp; 5.4)</td>
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<td>Changed Senior Environmental Engineer to Environmental Engineer (Waste) (Item # 6.2)</td>
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<td>Added WMF user operating conditions (ATT # 3-D)</td>
<td>22</td>
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<td>Added waste management forms (Att # 4-A, B &amp; C)</td>
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1.0 **OBJECTIVE**

The management of waste at Ras Laffan Industrial City (RLC) in an environmentally safe and cost-effective manner to achieve the following:

- Application of QP's corporate Health, Safety and Environmental Policy to its full extent to protect the public health and the environment.
- Ensure appropriate waste collection, packing, labeling and transportation waste generated at RLC.
- Establish and maintain waste manifest of the movement and ultimate disposal of waste generated at RLC.
- Well-defined accountability and liability for waste management.
- Compliance with the State standards and RLC Environmental Regulations concerning Waste Management.

2.0 **SCOPE**

This procedure is applicable to all activities at RLC, which result in the generation or handling/management of waste. To provide common services for endusers a Waste Management Facility (WMF) has been constructed in RLC. The WMF is comprised of a three-cell, non-hazardous solid waste landfill (landfill), an inert waste pile (IWP) and a land treatment unit (LTU). The landfill included in the project is Phase I of a multi-phased landfill designed to meet the solid waste generation inventory of Ras Gas, Qatar Gas and RLC. Additional space has been reserved for future users. The Landfill will receive non-hazardous industrial waste. The LTU is designed to treat wastes such as digested sludge, non-hazardous oily and chemically contaminated soil and sludge from pits, sumps, and drain cleanouts. Waste, generated through construction activities, which is not biologically or chemically active in the natural environment including concrete and brick materials, broken clay, timber, plastics and rubber scraps may be disposed at the IWP.

3.0 **POLICY**

It is the position of RLC Senior Management that the handling, storage, transportation and disposal of waste generated at RLC shall be in accordance with the State environmental standards and RLC environmental regulations to prevent the occurrence of the following hazards:

- Contamination of surface water and groundwater.
- Emission of airborne pollutants.
- Nuisance created by noise, dust and odor.
• Health hazards created by breeding disease-carrying organisms.
• Injuries to workers.
• Threat to public health & safety.

All health & safety guidelines recommended by QP and the Supreme Council for Environmental & Natural Resources (SCENR), as may be issued from time to time, shall be adopted to minimize the environmental impacts of waste management practices.

4.0 RELATED DOCUMENTS

• Environmental Regulations Revision 1, 2005 (www.raslaffan.com)
• QP specifications for Waste Management (SPC-ENV-001)

5.0 DEFINITIONS

5.1 Hazardous Waste

Hazardous Waste:

• Constitutes a hazard to the public health and the environment.
• Has the following characteristic: flammable, combustible, ignitable; corrosive; reactive; toxic; poisonous, radioactive; infective.
• Because of its quantity, concentration, or physical, chemical, or infectious characteristics may:
  – Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness.
  – Pose a substantial or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. In addition, the following are considered hazardous unless specifically excluded.
• Waste that exhibits, on analysis, the characteristics of a hazardous waste.
• Waste that has been named as a hazardous waste.
- Waste that is a mixture containing listed hazardous and non hazardous waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste).
- The by-products of the treatment of hazardous waste.

5.2 **Non-Hazardous Waste**

Waste that does not constitute a hazard to public health and/or the environment and does not possess any of the characteristics or properties defined above for Hazardous waste. Examples of such waste are solid, liquid, semi-liquid or contained gaseous materials or waste resulting from industrial operations; digested sludge from industrial water supply treatment facilities and wastewater treatment facilities.

5.2.1 **Industrial Waste**

Examples of such waste are solid, liquid, semi-liquid or contained gaseous materials or waste resulting from industrial operations; sludge from industrial water supply treatment facilities, wastewater treatment facilities. Inert and non-hazardous industrial waste shall be disposed of at Waste Management Facility within RLC. The Entity shall be liable to pay associated fee (subject to change by QP/RLC, from time to time).

5.2.2 **Municipal Waste**

resulting from the operation of residential, commercial, municipal, industrial or institutional establishments and from community activities. Municipal waste includes garbage, refuse, industrial lunchroom or office waste and other decomposable materials. RLC requires that maximum efforts be taken to implement a source separation of food waste/putrescible waste to better manage these wastes and enable recycling. The options for disposal include, but not limited to use of a food disposer to pulverize and flush source separated food waste into the sewage system or landfill at Umm Al-Allafai Landfill.

5.2.2 **Inert Waste**

Waste that is not biologically or chemically active in the natural environment. Examples include glass, concrete and brick materials, broken clay and chinaware, most plastics and manufactured rubber products. These will be disposed at the RLC Waste Management Facility.

5.3 **Recyclable Wastes**

Means solid waste that exhibits the potential to be used repeatedly. Examples of recyclable wastes include plastic drums, empty plastic bottles, metal drums, batteries, paper etc. All generators shall incorporate active source-separation of recyclable materials at the generation point to improve rate of recycling and decrease waste disposed at landfills.

5.4 **Waste Oil**
Waste oil consists of used cooking oil from kitchens and used lubricant and other motor oils. They are managed separately and go back to the vendors or specialized waste recycling facilities. For lube oil, RLC has arranged with QP’s Mesaieed Operations for its proper management:

6.0 WASTE MANAGEMENT PROCEDURE

This procedure is flowcharted at Attachment 1.

6.1 General

At least six months prior to the commissioning of any new development, or three months prior to any modification, relocation or alteration of existing facilities which affects or alters the predefined characteristics, classification or quantity of expected waste generation, the facility owner/operator shall prepare and submit to the Lead Environmental Engineer at RLC an Environmental Information Report (EIR).

EIR reports shall demonstrate that environmental waste management controls shall be applied to the extent that the criteria detailed below and in other regulatory documents as referenced shall be met or exceeded.

The report shall include as a minimum:

- Waste name, classification, and an estimate of the amounts to be generated.
- Engineering design criteria, with respect to containers and storage areas.
- A description of the industrial process by which the waste is generated including the raw materials and chemicals involved.
- A process flow diagram, showing all associated incoming and outgoing materials.
- The physical and chemical characteristics of the waste.

All asset owners/operators shall maintain waste inventories and furnish these to QGPC/RLC on a quarterly basis.

All asset owners/operators shall operate and maintain temporary waste storage areas/sites within their site boundaries; such storage areas shall have sufficient capacity to store the expected waste generated for 90 days of routine operations and shall be of a design and construction sufficient to meet the criteria detailed in attachments to this procedure.

All asset owners/operators shall operate and maintain a waste manifest system and be able to provide QGPC/RLC with a detailed trail of the movement of generated waste.
6.2 Waste Management

As waste is generated by a process or system, the generator (asset owner/operator) shall segregate/store/dispose of it in accordance with the defined criteria given as Attachment 2 to this procedure and the current environmental/health and safety guidelines and procedures.

Use of 3-R’s in Waste Reduction - Waste has been defined in this document as: "all discharges of solids, liquids and gases to the environment for which there is no economic demand and which cannot be prevented at source or recovered/re-cycled. Accidental discharges such as oil/produced water spills are also included." This means that every opportunity has to be taken to minimize waste at all stages of its generation. There are 3 major ways in which the quantities of waste can be minimized:

1. Reduction at source and segregation of different wastes at source;
2. Re-use;

6.2.1 Hazardous waste

Requires to be transported/stored/disposed and shall be handled in accordance with Attachment # 3A/B and meeting the following requirements:

- All hazardous waste shall be labeled and marked as Hazardous Waste before its transportation.
- The storage, handling and transportation of all hazardous waste shall be documented with inventories and manifests quoting quantities, characteristics, associated hazards and emergency procedures.
- Before transporting hazardous waste, operators shall seek and be granted approval from the Environment Department of SCENR.

6.2.2 Non- Hazardous wastes

Requires that it is transported/stored/disposed and shall be handled at the Ras Laffan Waste Management Facility. The use of this facility shall be in accordance with the requirements in Attachment 4.

6.2.3 Recyclables

Recyclables recovered from source separation programs instituted in various locations like kitchens, office buildings and process areas shall be stored separately and disposed through an approved recycling vendor/recycling facility.

6.3 Storage
Waste generators shall ensure that all waste is stored in facilities and under conditions appropriate to the classification of the waste and in accordance with the respective storage/disposal criteria and practices as detailed in the following attachment

- Storage Criteria for Hazardous Waste - Attachment 3A
- Storage Criteria for Non-Hazardous Waste - Attachment 4A

6.4 Disposal

Waste generators shall ensure that all waste is disposed in appropriate designated facilities and under conditions according to the classification of the waste and in accordance with the respective storage/disposal criteria and practices as detailed in the following:

- Disposal of Hazardous Waste - Attachment 3B
- Disposal of Non-Hazardous Waste - Attachment 4B, 4C, 4D

Each trip shall be accompanied by a duly completed waste manifest endorsed by the end-user and waste generator. The Generator shall have the applicable permit from SCENR for waste to be transported outside RLC. Waste transported to RLC WMF shall have a duly completed waste manifest on the forms issued by RLC after acceptance for disposal at the RLC WMF.

6.5 Color Coding

All facilities/companies shall observe the following upon requesting approval for skips used for storage of waste at their site

- The skips shall be of the following colors for storage of various wastes
  - Red- Hazardous
  - Blue- Domestic Wastes
  - Green- Recyclables
  - Yellow- Inert wastes including inert industrial wastes.

6.6 Reporting

All contractors and sub-contractors working in RLC shall submit a duly completed monthly report as in Attachment 4F.

All end-users in RLC shall submit a monthly waste management report
7.0 RESPONSIBILITIES

7.1 Respective Safety Officers/Facility Environmental Representatives:

Safety Officers/Facility Environmental Representatives are responsible for:

- Ensuring that their waste management operations are carried out in accordance with this procedure
- Transmitting waste storage/transportation/disposal inventories to the RLC Lead Environmental Engineer.
- Obtaining approval from SCENR prior to transporting their hazardous waste.
- Reporting to the management of RLC all environmental incidents, involving the release of hazardous substances into the environment.
- All contractors working at RLC shall submit a monthly contractor compliance checklist

7.2 RLC Environmental Section

The Environmental Section is responsible for:

- Assessing compliance with this procedure.
- Maintaining records of waste generation, transportation and disposal.
- Making recommendations to RLC Management on issues related to waste management.
- Supervision of industrial landfill operations, assessment of compliance with local and USEPA requirements
- Administration of O&M Contract for Waste Management Facility to assess compliance with the provisions of the O&M contract, Environmental Guidelines and facility’s permitting conditions.
Prior to any new development that will generate waste or modification to facilities/operations which will alter waste characteristics, owner/operator will submit EIR.

Owners/operators maintain waste inventories & furnish them to QP/RLC on a quarterly basis.

Owners/operators maintain temporary waste storage areas within their site boundaries.

Owners/operators operate and maintain waste manifest systems for handling of wastes.

As waste is generated, owners/operators segregate/store & dispose of in accordance with defined criteria given in attachment to this procedure.

Environmental section assesses owner/operator's compliance with this procedure, maintains a record of all waste generation/transportation & disposal, assists environmental representatives in obtaining scnr transportation and disposal permits.

All parties involved continuously strive to improve environmental practices thorough operational controls, environmental awareness education.
RLC WASTE MANAGEMENT PROCEDURE

WASTE

DOMESTIC WASTE

Is it process waste?

INDUSTRIAL WASTE

Is it Hazardous Waste?

Yes

Store at End-User Site for disposal at MIC/Other HWMF

No

Apply for disposal at RLC WMF

Source Separation

NON-RECYCLABLES

Consolidated at WMF

Consolidated at End-user

LANDFILL

RECYCLABLES

METAL

PAPER

WASTE

WOOD
STORAGE CRITERIA FOR HAZARDOUS WASTE

The following criteria shall apply for the storage of hazardous waste:

- Hazardous waste storage areas shall be designed with a spill containment system.
- Hazardous waste storage areas shall be protected to avoid run off, to and from the area, and have facilities to monitor and pre treat the run off if necessary.
- Containment curbs shall be maintained around loading and unloading areas.
- Containers and storage tanks shall be of a design and compatible material suitable to permanently contain their intended contents.
- Storage facilities shall be inspected regularly for leakage and structural/operational integrity.
- Incompatible materials shall not be stored/disposed of in common containment areas/containers;
- Storage facilities for volatile substances shall be covered and venting systems installed.
- The surface area used to store hazardous materials shall be adequately lined and leakage monitoring and detection system installed.
- Where groundwater pollution potential exists, monitoring of the groundwater shall be carried out and contingency plans established to deal with emergencies arising from the accidental discharge of hazardous materials.
- Storage areas shall be paved, fenced, suitably signposted/identified and illuminated after daylight hours.
ATTACHMENT 3-B

DISPOSAL

- All hazardous wastes shall be stored at temporary storage areas (as per Item No. 3.3.1 of RLC Environmental Regulations Revision 1) until a hazardous waste management facility is operational at Mesaieed Industrial City. If the waste cannot be managed at Mesaieed Hazardous Waste Management Facility, the Entity shall arrange to transport the hazardous waste outside Qatar (in line with provision of Basil Convention).

- National Hazardous Waste Treatment Center located in Mesaieed upon commencement of operations shall be the disposal site for all Hazardous Waste. (to be updated later to include hazardous material disposal criteria and requirements)
STORAGE CRITERIA FOR NON-HAZARDOUS WASTE

Storage areas

Storage areas shall be selected and designated to prevent the accumulation of refuse and outbreak of health and fire hazards. The following guidelines shall apply:

- Storage areas shall be readily accessible to collection vehicle.
- Records of waste generated, stored on site and transported shall be maintained by the generator. Reception areas shall be designed to prevent the spread of fire, emission of airborne pollutants, odor and disease carrying organisms (e.g. rodents) throughout the area;
- Storage areas shall be of an adequate capacity to accommodate the required number of containers consistent with waste generation routine and collection schedules.
- Waste materials shall be removed to the designated disposal on a daily basis or site at the earliest opportunity as appropriate.
- Containers shall be marked and selected for their specific service; they shall be fitted with lids and shall display the collection times.
- Containers and storage area shall be kept clean and disinfected at all times.
LANDFILL AND DISPOSAL CRITERIA FOR NON-HAZARDOUS WASTES
GENERATED IN RLC

NON-HAZARDOUS WASTES ACCEPTED AT RLC WASTE MANAGEMENT
FACILITY

RLC has an integrated waste management facility (WMF) to treat, reuse and/or dispose all non-hazardous waste generated in RLC excluding domestic waste. Waste generators of non-hazardous materials may utilize an appropriate disposal option to dispose of waste as discussed in the waste management flowchart (Attachment 2).

Landfill Disposal Exceptions

Note: Incompatible materials shall not be stored/disposed of in common containment areas/containers. The following materials shall not be land filled:

- Ignitable waste with a flash point of less than 60°C.
- Any material that has a potential to cause fire through friction, absorption of moisture, spontaneous chemical change or retained heat from the manufacturing process.
- Any ignitable compressed gas
- An oxidizer
- Corrosive waste with a pH less than or equal to 2, or greater than or equal to 12.
- Reactive waste which is normally unstable; reacts violently with water; forms an explosive mixture with water; generates toxic gases, vapors or fumes when mixed with water; is a sulfur or cyanide bearing waste which can generate toxic gases, fumes or vapors when exposed to mild acid or basic conditions; or is capable of detonation or explosion.
- Toxic waste whose extracts exceed the USEPA Toxicity Characteristic Leaching Procedure (TCLP) limits for toxic constituents.
- Radioactive waste.
- Pathogenic and infectious waste which has not been rendered non-hazardous by autoclave, chemical treatment, incineration or gas sterilization.
- Polychlorinated Biphenyl’s (PCBs).
- Liquid waste except those exempted.
- Sludge that is not dewatered to the maximum extent possible, consistent with current technology.
- Undigested raw municipal sludge.

1 Industrial Waste

Inert and non-hazardous industrial waste shall be disposed of at Waste Management Facility within RLC and the Entity shall be liable to pay associated fees (subject to change by QP/RLC, from time to time). These waste that does not constitute hazard to public health and/or the environment and does not possess any of the hazardous characteristics or properties defined above. Examples of such waste are, solid, liquid, semi-liquid or contained gaseous materials or waste resulting from industrial operations; digested sludge from industrial water supply treatment facilities, wastewater treatment facilities.

Conforming Wastes at RLC Industrial Waste Landfill

<table>
<thead>
<tr>
<th>Waste Name</th>
<th>Waste Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claus catalyst &amp; support catalyst</td>
<td></td>
</tr>
<tr>
<td>TGT catalyst &amp; support catalyst</td>
<td></td>
</tr>
<tr>
<td>Activated carbon &amp; support catalyst</td>
<td>Sulphur impregnated activated carbon, inert balls</td>
</tr>
<tr>
<td>Mol sieves &amp; support</td>
<td>Molecular sieve, inert ball</td>
</tr>
<tr>
<td>Desiccant</td>
<td>Air dryer beds-Compressed air system</td>
</tr>
<tr>
<td>Naphthenic caustic</td>
<td>Unit spent caustic (Merichem)</td>
</tr>
<tr>
<td>Sulphur/ Sulphur Impacted debris</td>
<td>Solid sulphur, soil with sulphur</td>
</tr>
<tr>
<td>Water filters</td>
<td>Filter element – water</td>
</tr>
<tr>
<td>Process &amp; Oil filters</td>
<td>Process filter - amine, glycol, oil, fuel</td>
</tr>
<tr>
<td>Chemical debris</td>
<td>Sludge, residues, foams, tank bottom, soil, debris</td>
</tr>
<tr>
<td>Bio-sludge &amp; Solids</td>
<td>Bio-sludge &amp; Solid from sanitary system Unit-87</td>
</tr>
<tr>
<td>Resins &amp; filter sand</td>
<td>Cation Ion &amp; Calcinated dolomite</td>
</tr>
<tr>
<td>Tires- Vehicle</td>
<td>Truck, forklift, vehicles, cranes tires</td>
</tr>
<tr>
<td>Construction debris</td>
<td>Debris from construction, rock, brick-inert</td>
</tr>
<tr>
<td>Insulation</td>
<td>Fibreglass, foam, Glass wool</td>
</tr>
<tr>
<td>Refractory</td>
<td>Furnace lining brick / Poured</td>
</tr>
<tr>
<td>Ash</td>
<td>Solid Waste Oxidizer ash</td>
</tr>
<tr>
<td>Glass</td>
<td>Beakers, funnel &amp; broken glass, empty container</td>
</tr>
<tr>
<td>Abrasives</td>
<td>Blast grit, paint chips &amp; rust scale</td>
</tr>
<tr>
<td>Analytical devices</td>
<td>Dreager tubes gas sensors H2S detector</td>
</tr>
</tbody>
</table>
Non-Conforming Wastes at the RLC Industrial Waste Landfill (Materials Not Eligible for Storage)

<table>
<thead>
<tr>
<th>Waste Name</th>
<th>Waste Description</th>
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</thead>
<tbody>
<tr>
<td>Glycol/Coolants</td>
<td>Liquid/sludge/scale glycol, coolant, antifreeze</td>
</tr>
<tr>
<td>Amine/Sulfinol</td>
<td>Liquid/sludge/scale amine/DIPA/</td>
</tr>
<tr>
<td>Oil (Used)</td>
<td>Lube oil, hydraulic oil, transmission oil, grease</td>
</tr>
<tr>
<td>Fuels</td>
<td>Diesel, Jet Fuel, Condensate</td>
</tr>
<tr>
<td>Solvents (used)</td>
<td>Kerosene, hexane, toluene, Lab solvents</td>
</tr>
<tr>
<td>Cooking oil</td>
<td>Cooking oil</td>
</tr>
<tr>
<td>Office trash</td>
<td>Paper, containers, plastic, food, scraps, cartons/cardboard</td>
</tr>
<tr>
<td>Batteries</td>
<td>Pb-Acid / Dry-cell / gel UPS batteries</td>
</tr>
<tr>
<td>Heavy metal containing waste</td>
<td>Fluorescent light tube, Switches, mercury containing devices</td>
</tr>
<tr>
<td>Paint</td>
<td>Paints, thinners, coatings</td>
</tr>
<tr>
<td>Pyrotechnics</td>
<td>Safety flares-unused</td>
</tr>
<tr>
<td>Radioactive Materials</td>
<td>Naturally Occurring Radioactive Material, smoke detectors</td>
</tr>
<tr>
<td>Acids &amp; bases</td>
<td>Lab reagents</td>
</tr>
<tr>
<td>Analytical devices</td>
<td>Dreager tubes gas sensors H2S detector</td>
</tr>
</tbody>
</table>

2 **Inert Waste Landfill** *(Reception Only With Prior Arrangement with RLC until commencement of operation at RLC-WMF)*

Waste, generated through construction activities, which is not biologically or chemically active in the natural environment is regarded as inert. Examples include concrete and brick materials, broken clay, timber, empty metal containers, most plastics and rubber scrap. Waste shipment consignment is certified by End users EHS Staff (signed & stamped) for their waste, their contractors waste and for QP Contractors waste. The consignment note shall be stamped by supervising department (EDR, EMC, RLC). Inert and non-hazardous industrial waste shall be disposed of at RLC Waste Management Facility and the Entity shall be liable to pay associated fees (subject to change by QP/RLC, from time to time). Where clarification is required QP/RLC should be contacted.

3 **Land Treatment Unit (LTU):**

Acceptable waste streams at the LTU are as follows:

<table>
<thead>
<tr>
<th>WASTE STREAM</th>
</tr>
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<tbody>
<tr>
<td>Digested Sludge</td>
</tr>
<tr>
<td>Non-Hazardous oily and chemically Contaminated Soil; Sludge from Pits, Sumps, Drain cleanouts</td>
</tr>
</tbody>
</table>
NON-HAZARDOUS WASTES NOT ACCEPTED AT RLC WASTE MANAGEMENT FACILITY

1. **Domestic Waste**
   This includes garbage, refuse, industrial lunchroom or office waste and other decomposable materials. The waste is collected in skips and waste shipment consignment is certified by End users EHS Staff (signed & stamped) for their waste and for their contractors waste and transported to RLC WMF for consolidation before transport to Umm-Allafai landfill site. For QP Contractors waste the consignment note is stamped by supervising department (EDR, EMC, RLC). Original consignment note is received at RLC Main Gate and used for record keeping and update of waste inventories and a copy is required at Umm-Allafai landfill site.

RECYCLABLE WASTES

1. **Empty Plastic Drums/Empty plastic bottles** - Plastic materials are collected and a waste consignment note are generated and the waste plastic is sent to an approved vendor for plastic recycling.

2. **Metal Drums** - Scrap metal is collected and a waste consignment note is generated and the scrap is sent to an approved vendor for metal recycling.

3. **Batteries** - Old batteries are collected and a waste consignment note is generated and the used batteries are sent to an approved vendor for battery recycling.

4. **Waste Paper** - Waste paper are collected and a waste consignment note is generated and the waste papers/cardboard are sent to Centre of Environment Friends or local paper recycling facility.

5. **Food Waste** – Source separated food waste at the kitchens and canteens may be flushed into the sewage system provided it is pulverized with food disposer. However, before implementing this please check with the sewage plant operator.

6. **Waste Oil**
   - Notify and coordinate the logistics QP Tank Farm Supervisor at Tel: 4774346
   - Waste oil should be transported in a tanker/holding tank
   - Warning signs must be displayed on the tanker/holding tank
• Tanker/holding tank must be fitted with fire extinguishers (dry powder type) and earthing should be provided for the tanker/holding tank.
• Hose connection must be inspected prior to each delivery and spill containment booms should be available within the tanker/holding tank.
• A diesel driven motor for pumping is required.
• One laborer must accompany the driver for handling purposes.
• Waste oil must be free from contaminants such as PCBs (an analytical report is required).

Complete the enclosed form and submit it to RLC for their concurrence prior to commence the transportation Tel: 4774346
ATTACHMENT 4-C

RECEPTION OF WASTE AT RLC WASTE MANAGEMENT FACILITY (WMF)

1. Pre-Shipment of Waste
   a. Generator shall provide RLC with an estimate of the expected volumes of waste for each type of waste generated by the user that is proposed for disposal at the WMF. The expected volumes shall be on an annual basis and for the first five (5) years of operation of the WMF.
   b. Upon any change in the generator business that may significantly change the disposal requirement at the WMF, the generator shall notify QP accordingly at least 2 years prior to change of its requirements.
   c. The Generator shall provide RLC with a full and accurate description of the Waste and appropriate procedures for handling the Waste safely by completing a Waste Description/Profile sheet contained in Attachment 4-D, at least 3 days prior to proposed shipment of waste.

2. Waste Transport Requirements
   a. The Generator shall transport only Conforming Waste. The Waste Description/Profile sheet for such materials shall be submitted to and approved by QP.
   b. All waste transported to the WMF facility shall be accompanied by a completed Waste Manifest Sheet contained in QP-WMF #2, duly completed by the Waste Generator.
   c. Each type of waste shall be transported separately and waste shall not be commingled. Waste if commingled shall be considered Non-Confirming until the Non-Confirming Waste is re-classified as Conforming Waste.
   d. Waste will not be accepted at the waste management facility unless the waste is adequately covered or confined in the vehicle transporting the waste to prevent dust, and blowing litter.
   e. If a waste transport vehicle reaches after operating hours, the vehicle must either return to generator or be secured by the transporter at a suitable location. User undertakes not to allow Waste to collect or accumulate from its activities along routes to the WMF and anywhere else in RLC and, undertakes to ensure that such Waste is securely maintained and fastened so that none are thrown or deposited in the water or onto the land during transportation.

2. Non-Conforming Waste
   a. Non-Conforming Waste as listed in Attachment 3-C. Upon discovery before dumping shall be the responsibility of the User Care, custody and control of the Non-Conforming Waste shall not be assumed by RLC unless the Non-Conforming Waste is re-classified as Conforming Waste.
b. Non-Conforming Waste if dumped, shall be isolated and secured by the RLC and held until the Non-Conforming Waste is re-classified as Confirming Waste under. Otherwise the User shall be responsible for the removal of the waste and all associated costs and charge. See comments above.

1. **Compliance**
   a. Generator shall comply fully, at all times, with all Applicable Laws, and shall not at any time use or cause to be used any premises, facilities, services or functions within the WMF in violation of the WMF Regulations or of Applicable Law which have been, or which may be enacted, issued or amended by a competent authority and in force during the term of this Agreement.
   b. Generator acknowledges that any Applicable Law apply to their employees, agents, Subcontractors and all other persons entering the WMF or that are related to generation, transportation and have any other business related to Waste, or in the service of Generator, and Generator shall bring the same to the attention of such persons. Generator shall ensure that all vehicles are authorized to enter the WMF on its behalf, whether owned or leased by Generator, comply in every respect with any Applicable Law. Without prejudice to its other rights, RLC shall be entitled to order the removal of any person or vehicle when, in the opinion of RLC, removal is necessary for safety or any other reasonable cause under the RLC Regulations and/or Applicable Law.
   c. The Generator acknowledges that the RLC Health & Safety Regulations and any Applicable Laws apply to their employees, agents, Subcontractors and all other persons entering the Waste Management Facility or that are related to generation, transportation and have any other business related to Waste, or in the service of Generator, and Generator shall bring the same to the attention of such persons.
   d. The driver shall remain with the truck at all times and comply with the WMF operator instructions during entrance, disposal and exit at the WMF.
ATTACHMENT 4-D

Waste Descriptions/Profile Sheet

RAS LAFFAN INDUSTRIAL CITY

Waste Profile Sheet
No. ___

I. GENERATOR INFORMATION

Generator Name: ____________________________
Mailing Address: ____________________________
Plant Address: ______________________________
Business Contact: __________________________ Phone: __________________
Technical Contact: __________________________ Phone: __________________

II. GENERAL WASTE INFORMATION

Waste Material Name: _______________________ Generation Unit # / Equip. #: ______
Describe process that generates waste: ________________________________________________

Is your company the original generator of the waste?  □ Yes  □ No
If not, provide the name of the original generator: ______________________________________

Rate of Generation: __________________________ Current accumulation: __________ Bulk: ___

Check all types of containerization

□ 55-Gallon Steel Drum (SC)  □ 55-Gallon Fiber Drum
□ 30-Gallon Steel Drum  □ 6-Gallon Pail
□ 86-Gallon Steel Drum  □ Bulk (for bulk shipments, waste viscosity must be <5000 cps)
(without inside containers)  □ Others (Specify)
□ Palletized small containers

(Complete into below)
Overall dimensions of material on pallet: \( \times \) ___ \( \times \) ___ (High)

Dimensions of pallet only: ___ \( \times \) ___ (High)

What are the small containers on the pallet? ___ (1 qt. Bottles, 8 oz. Aerosol Cans, etc.)

III. WASTE STREAM CHEMICAL COMPOSITION

<table>
<thead>
<tr>
<th>COMPONENTS INCLUDING HAZARDOUS CONSTITUENTS</th>
<th>CONCENTRATION RANGE (UNITS)</th>
<th>AVERAGE % MUST TOTAL 100%</th>
<th>TLV (IF PUBLISHED)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to</td>
<td></td>
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<td></td>
<td>to</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This waste Profile sheet is a new revision of a previously submitted Waste Profile Sheet No. ___ dated ___.

Attach to this Form any additional information which must be known to treat, store or dispose of the waste safely & including, but not limited to, laboratory analysis and Material Safety Data Sheets.

IV. SPECIFIC ANALYSIS OF WASTE

Methods used to obtain a representative sample of the analyzed waste (i.e. grab, composite, etc.) Sampling methods are described in:

**GENERATOR’S KNOWLEDGE & MSDS**

In completing the next two items, do not leave blanks. If the specific elements are not present, indicate “None”

**CONCENTRATION:**

<table>
<thead>
<tr>
<th>Organic Bound</th>
<th>RANGE</th>
<th>AVE.</th>
<th>Metals (Actual Content)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur</td>
<td>to</td>
<td></td>
<td>Arsenic ( \text{mg/kg} )</td>
</tr>
<tr>
<td>Chlorine</td>
<td>to</td>
<td></td>
<td>Mercury ( \text{mg/kg} )</td>
</tr>
<tr>
<td>Fluorine</td>
<td>to</td>
<td></td>
<td>Barium ( \text{mg/kg} )</td>
</tr>
<tr>
<td>Bromine</td>
<td>to</td>
<td></td>
<td>Nickel ( \text{mg/kg} )</td>
</tr>
<tr>
<td>Iodine</td>
<td>to</td>
<td></td>
<td>Cadmium ( \text{mg/kg} )</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>to</td>
<td></td>
<td>Selenium ( \text{mg/kg} )</td>
</tr>
<tr>
<td>Phosphorous</td>
<td>to</td>
<td></td>
<td>Chromium ( \text{mg/kg} )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lead ( \text{mg/kg} )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aluminum %</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Magnesium %</td>
</tr>
</tbody>
</table>

(Base % WT on Molecular Structure)
Does this waste contain PCBs?
☐ Yes  ☐ No
If yes, give the concentration regardless of amount and attach supporting documentation:

_________ Mg/kg

Does this waste contain insecticides, pesticides, herbicides, or rodenticides?
☐ Yes  ☐ No
If yes, identify each in the space below and the concentrations:

________________________ Mg/kg  ______________________ Mg/kg

(Include Safety Data Sheets for each)

Does this contain Dioxin?  ☐ Yes  ☐ No
Does this waste contain free cyanide?  ☐ Yes  ☐ No
Does this waste contain free sulfide?  ☐ Yes  ☐ No

V. TOXICITY

Check applicable data:

☐  Eye  Explain

☐  Inhalation  Explain

☐  Dermal  Explain

☐  Ingestion  Explain

☐  Other  Explain

☐  Carcinogen  Explain

(suspected or known)

VI. PHYSICAL PROPERTIES

Physical State at 20°F (check)

Liquid ☐  Semi-solid ☐  Solid ☐

Slurry ☐  Sludge ☐  Gas ☐

Viscosity at 20°F ______________ CPS

Is material Pumpable?  ☐ Yes  ☐ No

Varies (Explain):

Is waste multi-layered?  ☐ Yes  ☐ No

Is yes, please describe and quantify each layer:
1. Top %
2. Middle %
3. Bottom %

Dissolved Solids: %W
Energy Content: Btu/Kg
Flash Point: °
Specific Gravity:
Corrosivity: mp

Suspended Solids: %W
Ash Content (% by WT):
Vapor Pressure at 20 °C:
pH:
Color:

What is the Reactivity Group Number(s) for this waste?


Is this material stable? Yes No
If no, explain:

Is this material shock sensitive? Yes No
If yes, explain:

VII. SAMPLING INFORMATION
Sample Source (e.g. drum, lagoon, pond, tank, vat, etc):
Date sampled:
Sampler's
Generator's Agent Supervising Sampling:
No Sample required (Provide)

VIII. UN DANGEROUS GOODS INFORMATION:
In accordance with the IMO Dangerous Goods Code:

Proper Shipping Name:
Hazard Class:
UN Number:
Container Label(s): (for containers of 110 gallons or less)
Additional Description:
Placards:
Generator's hazardous waste shipments must also comply with the labeling requirements of RCRA and CFR Part 262.

Is this waste a soil and/or debris?  □ No  □ Yes

Soil □  Debris □  Both □

COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION:

<table>
<thead>
<tr>
<th>TOTAL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anilinone as Sb</td>
<td>Mgg/kg</td>
</tr>
<tr>
<td>Beryllium as Be</td>
<td>Mgg/kg</td>
</tr>
<tr>
<td>Potassium as K</td>
<td>Mgg/kg</td>
</tr>
<tr>
<td>Sodium as Na</td>
<td>Mgg/kg</td>
</tr>
<tr>
<td>Bromine as Br</td>
<td>Mgg/kg</td>
</tr>
<tr>
<td>Chlorine as Cl</td>
<td>Mgg/kg</td>
</tr>
<tr>
<td>Fluorine as F</td>
<td>Mgg/kg</td>
</tr>
<tr>
<td>Sulfur as S</td>
<td>Mgg/kg</td>
</tr>
</tbody>
</table>

RECLAMATION, FUELS OR INCINERATION PARAMETERS (Provide if information is available)

RANGE

Heat Value (BTU/kg)  

Water:  

Viscosity (cpe):  @ 20 °C  @ 160 °C  

Ash:  %  

Settleable solids:  %  

Vapor Pressure @ 20 °C (mm/Hg):  

Is this waste a pumpable liquid?  □ Yes  □ No  

Can this waste be heated to improve flow?  □ Yes  □ No  

Is this waste soluble in water?  □ Yes  □ No  

Particle size: Will the solid portion of this waste pass through a 1/8-inch screen?  □ Yes  □ No  

Special Handling Information:  

ACCOUNTABILITY STATEMENT:

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS CONTAINS TRUE AND ACCURATE DESCRIPTIONS OF THIS WASTE. ANY SAMPLE SUBMITTED IS REPRESENTATIVE. ALL RELEVANT
INFORMATION REGARDING KNOWN OR SUSPECTED HAZARDS IN THE POSSESSION OF THE GENERATOR HAS BEEN DISCLOSED.

Authorized Signature  Printed (or Typed) Name and Title  Date
|------------|----------------------|--------------|-------------------------------------|--------|-------|--------------------------------------|

**Generator Certification:** I hereby declare the contents of this consignment are accurately described above and in all respects in proper condition for transport and as characterized in the Waste Profile Form. I take responsibility if the waste disposed as RLC-WMF is non-conforming waste.

<table>
<thead>
<tr>
<th>Generator</th>
<th>Name:</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

**Transporter Certification:** I acknowledge receipt and proper delivery of materials as described above at the disposal facility indicated by the Generator.

**Transporter #1**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

**Transporter #2**

<table>
<thead>
<tr>
<th>Company</th>
<th>Name:</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

**Destination Facility:**

- Management Method: 
- Contact: 
- Location/Address: 
- Telephone/Fax: 
- Actual Weight: 

**Destination Certification:** I certify receipt of the materials described above and that such material was properly treated and disposed of on this date.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Name:</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

**Comments/Warnings:**
## RLC WASTE MANAGEMENT PROCEDURE

**Title:** RLC WASTE MANAGEMENT PROCEDURE

**QPR - RHE - 002**

**Rev. No. 2**
**Date:** 28 Feb, 2005
**Page 28 of 28**

### PART - 1
Contractor Co.: 
Tel.: 
Address: 
Fax: 

### PART - 2
Ras Laffan Work Permit No./Contract No.: 
Type of Work Performed: 
Location of Work: 
Number of Persons Employed at Work Site: 

### PART - 3
**Environmental Checklist – Month:**

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Waste</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of waste skips on work site:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of skips dumped:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste receiving facility:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid waste holding tank:</td>
<td>□ Yes</td>
<td>□ No</td>
</tr>
<tr>
<td>Number of times emptied during the month:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transporter Name:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dumped at Ras Laffan Seawater Treatment:</td>
<td>□ Yes</td>
<td>□ No</td>
</tr>
<tr>
<td>Waste Oil</td>
<td>□ Yes</td>
<td>Dumped at</td>
</tr>
</tbody>
</table>

#### a) Asphalt
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dumped at</td>
<td>Vol/Wt</td>
</tr>
</tbody>
</table>

#### b) Tires
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dumped at</td>
<td>Vol/Wt</td>
</tr>
</tbody>
</table>

#### c) Concrete
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dumped at</td>
<td>Vol/Wt</td>
</tr>
</tbody>
</table>

#### d) Metal
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dumped at</td>
<td>Vol/Wt</td>
</tr>
</tbody>
</table>

#### e) Other (describe): 
Dumped at

### PART - 4
**Checklist Certification:** I hereby declare that the content of this checklist is accurate.

<table>
<thead>
<tr>
<th>Contractor Rep:</th>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

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