MANAGEMENT OF INDUSTRIAL WASTE & WAY FORWARD

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Maharashtra Pollution Control Board
March 2012

Apply to the handling of hazardous wastes specified in Schedules but not apply to –

i) Waste water and exhaust gases covered under the Water and the Air Acts.

ii) Waste arising out of the operations from ships beyond 5 km of relevant base line as covered under the Merchant Shipping Act, 1958.


**IMPORTANT DEFINITIONS:**

a) **Authorization**: Means permission for generation, handling, collection, reception, treatment, transport, storage, recycling, reprocessing, recovery, reuse and disposal of hazardous wastes granted under sub-rule (4) of Rule 5.


c) **Disposal**: Means any operation which does not lead to recycling, recovery or reuse and includes physico-chemical, biological treatment, incineration and disposal in secured landfill.

d) **Environmentally sound management of hazardous wastes**: Means taking all steps required to ensure that, the hazardous wastes are managed in a manner to protect health and the environment against adverse effects which result from such wastes.
e) Environmentally Sound Technologies: Means any technology approved by the Central Pollution Control Board from time to time.

f) Facility: Means any establishment wherein the processes incidental to the handling, collection, reception, treatment, storage, recycling, recovery, reuse, and disposal of hazardous wastes carried out.

g) Hazardous Wastes: Means any wastes by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to danger to the health or environment whether alone or in contact with other wastes or substances and shall include
h) Recycler or Preprocessor or Actual User: Means an occupier who procures and possesses hazardous wastes for recycling or recovery or reuse.

i) Recycling: Means reclamation and reprocessing of hazardous wastes in an environmentally sound manner for the original purpose or other purposes.

j) Reuse: Means use of hazardous wastes for the original purpose or other purposes.

k) Recovery: Means any operation in the recycling activity wherein specific materials are recovered.
l) Transboundary Movement: Means any movement of hazardous wastes from an area under the jurisdiction of one country to or through an area under the jurisdiction of another country or through an area not under the jurisdiction of any country, provided at least 2 countries are involved in the movement.

m) Treatment: Means a method, technic or process, designed to modify the physical, chemical or biological characteristics or composition of any hazardous wastes, so as to reduced its potential to cause harm.

n) Besides that, used oil and waste oil also defined.
Regarding storage of hazardous wastes, the period of 90 days prescribed for the first time to the occupiers, recyclers, re-processors, re-users and operators of facility, SPCB may extend period:

- **Small** generators upto 10 tones,
- 6 months for recyclers, re-processors
- Facility operators of their annual capacity
- Generators not having assessed to any TSDF
Recycler, Re-processor or reuse of hazardous wastes to make an application for the grant of renewal of registration with Consent to Establishment from the SPCB,

Certificate of registration by the Dist. Industry Centre and proof of installed capacity of plant and machinery as well as compliance of effluent, emissions standards and treatment and disposal of hazardous wastes.

CPCB is authorized to grant registration.

Sale or Transfer of Hazardous Wastes for Recycling: The generator of HW specified in Schedule-IV may sale it only to the Recycler having a valid registration from the CPCB for recycling or recovery.
Standards for Recycling: Central Government or CPCB may issue guidelines for the same from time to time.

Utilization of Hazardous Wastes: Utilization of hazardous wastes as a supplementary resource or for energy recovery or after processing shall be carried out only after approval from the CPCB.
IMPORT AND EXPORT OF HAZARDOUS WASTES:

a) MoEF is nodal ministry to deal with Transboundary movement of hazardous wastes.
b) No hazardous wastes shall be imported from any country to India for disposal except for recycling, recovery or reuse.
c) Export may be allowed to an actual user of the wastes or operator of a disposal facility with the prior informed consent of the importing country to ensure environmentally sound management.
d) No import or export of hazardous wastes specified in Schedule-VI permitted.
e) Import and export of hazardous wastes specified in schedule – III is regulated in accordance with the provisions laid down in the schedule:
   - Part A - Required prior informed consent + DGFT permission
   - Part B - Required registration with SPCB on behalf of actual user
   - Part C - List of Hazardous characteristics (explosive, flammable, corrosives, organic peroxides, ecotoxic, infectious, toxic) having wastes required central government permission
f) Import export needs to apply in Form 7 and 8 to Central Government.
g) Exporter/Importer shall ensure shipment accompanied with movement document in Form 9.
h) The Importer and exporter shall maintain records in Form 10.
i) MPC Board has granted total 396 import registration till March 2012 to importer of Hazardous Waste (Metal & Metal-bearing wastes (Part-D of schedule – III) on behalf of end user under Hazardous Wastes (Management, Handling & Transboundary Movement) Third Amendment Rules, 2010.
a) Without permission of Central Government
b) Permission obtained through falsification, misrepresentation, fraud
c) Shipping details not provided in the movement document
d) Results in deliberate disposal/dumping in contravention of the Basal convention and principals of international/national law

In case of illegal import, importer shall re-export the waste in question at his cost within a period of 90 days from the date of its arrival to India.
H) Packaging, Labeling & Transport of Hazardous Waste
I) Records And Returns
J) Appels.
<table>
<thead>
<tr>
<th>Form No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Application for obtaining authorization</td>
</tr>
<tr>
<td>2</td>
<td>Form for grant/renewal of authorisation</td>
</tr>
<tr>
<td>3</td>
<td>Maintaining records of hazardous wastes</td>
</tr>
<tr>
<td>4</td>
<td>Form for filing annual returns</td>
</tr>
<tr>
<td>5</td>
<td>Form of application of registration for reprocessing/recycling</td>
</tr>
<tr>
<td>6</td>
<td>Annual returns and records by the recyclers</td>
</tr>
<tr>
<td>7</td>
<td>Application for import or export of hazardous waste</td>
</tr>
<tr>
<td>8</td>
<td>Application for transboundary movement of hazardous waste</td>
</tr>
<tr>
<td>9</td>
<td>Transboundary movement - movement document</td>
</tr>
<tr>
<td>10</td>
<td>Format for maintaining records</td>
</tr>
<tr>
<td></td>
<td>Of hazardous waste imported and exported</td>
</tr>
<tr>
<td>11</td>
<td>Transport emergency (term) card</td>
</tr>
<tr>
<td>12</td>
<td>Marking of hazardous waste container</td>
</tr>
<tr>
<td>13</td>
<td>Hazardous waste manifest</td>
</tr>
<tr>
<td>14</td>
<td>Format of accident report</td>
</tr>
<tr>
<td>15</td>
<td>Application for filing appeal</td>
</tr>
<tr>
<td></td>
<td>Against the order passed by cpcb/spcb/pcc of the union territory</td>
</tr>
</tbody>
</table>
SCHEDULES OF RULES

- i) Process generating Hazardous Wastes Schedule-I
- ii) Wastes constituents with concentration limits schedule-II
- iii) Wastes specified in Part-A or Part-B or Schedule-III in respect of import or export of such wastes in accordance with rules 12, 13 and 14 and other than the wastes specified in Part-A or Part-B which possess any of the hazardous characteristics specified in Part-C
- iv) List of Hazardous Waste requiring Registration from CPCB Recycling/Reprocessing – Schedule IV

Schedule-V: Specifications of used oil suitable for reprocessing/recycling in Part-A and in Part-B it gives specifications of fuel derived from waste oil.

Schedule-VI – Hazardous wastes prohibited for import and export.

Schedule-VII – List of authorities and corresponding duties.
“Hazardous wastes site” means a place for collection, reception, treatment, storage and disposal of hazardous wastes to the environment which is approved by the competent authority”
ROLE OF GOVT. OF MAHARASHTRA FOR DEVELOPING CHWTSDF SITES

- The Government of Maharashtra (GoM) declared MIDC as a nodal agency for selection of potential sites, carrying out EIA, developing sites etc under the Rule 8(i),(ii)&(iii) of the Hazardous Waste (M&H) Rules, 1989 & entrusted the power to MIDC vide their GR ENV 1096/CR-19/TC-2 dated 12th March 1997.

- MIDC invited the global tenders under the guidance of an Expert committee comprising of M.S. CPCB, Advisor MoEF, M.S.MPCB, Prof. S.K. Gupta & Prof. Shyam Asolekar from IIT, Mumbai and CEO MIDC as conveyor for the development of the TSDF facility on BOOT basis.

- Developer is Responsible to Design, Construct, Operate & maintain the facility over a period of 50 years (20 years operation + 30 years post closure period).
CHWT SDF sites in Maharashtra

- Butibori, Nagpur
- TTCWMA, Thane
- TALOJA, Raigad
- Ranjangaon, Pune

Operational TSDF
Proposed TSDF
STATUS OF CHWTSDF IN MAHARASHTRA

CHWTSDFs in operation in the State :- 4

I) Mumbai Waste Management Ltd. Taloja, Raigad.
   Project cost - Rs. 42.30 Crores
   Secured Landfill – 1,20,000 TPA
   Incineration – 20,000 TPA
   BMW – 1,500 TPA
   In operation since – June 2002
   No of Members – 3199
   Qty of HW Received - 8,15,200 MT
   Till 31/03/2012

II. TTC WMA, TTC, Navi Mumbai
   Project cost - Rs. 7.80 Crores
   Secured Landfill – 10,000 Tones
   In operation since – Jan 2004
   No of Members – 1622
   Qty of HW Received - 2,45,737 MT
   Till 31/03/2012
CHWTSDFs in operation in the State :- 4

I) Maharashtra Enviro Power Ltd. Ranjangaon, Pune.
- Project cost: Rs. 87.11 Crores
- Secured Landfill: 60,000 TPA
- Incineration: 20,000 TPA
- In operation since: Jan 2007
- No of Members: 1728
- Qty of HW Received: 1,49,361 MT
  Till 31/03/2012

II. Vidharbha Enviro Protection Ltd. Butibori, Nagpur
- Project cost: Rs. 86.64 Crores
- Secured Landfill: 60,000 Tones
- Incineration: 20,000 TPA
- In operation since: April 2008
- No of Members: 553
- Qty of HW Received: 55,058 MT
  Till 31/03/2012
SECURED LANDFILL SITE – CHWTSDF TALOJA
Landfill Cell of CHWT SDF at Ranjangaon, Pune
STORAGE SHED AT CHWTSDF, RANJANGAON
STORAGE AREA AT CHWTSDF, RANJANGAON, PUNE
Plasma Temp- 4500\(^0\)c, Chamber Temp- 1200\(^0\)c, Capacity- 3 MT/Hr, No Ash only slag generation, 3 MW electricity from heat recovery.
HAZARDOUS WASTE DUMPS CLEAN UP AND DISPOSAL

1.5 million MT dump was capped at MIDC Tarapur in year 2006.
CAPPING OF SLF AT TARAPUR
HW Transporter in Maharashtra: 111
Waste oil/used oil recycling units: 42
Non ferrous HW Recycler: 46
Notices issued for levy of fine: 59
Remediation cost recovered: Rs.3.75 Crore
Levy of fine received by MPCB: Rs.43,29,685
Formation of HWM Cell by out sourcing for
  + inventory preparation and up gradation
  + Tracking of hazardous wastes
# Region-Wise Inventoryed Hazardous Waste Generation (MTPA) Updation of 31\textsuperscript{st} March-2011

<table>
<thead>
<tr>
<th>Regions</th>
<th>SLF (MTPA)</th>
<th>RCL (MTPA)</th>
<th>INC (MTPA)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mumbai</td>
<td>37902.74</td>
<td>309524.06</td>
<td>18252.31</td>
<td>365679.11</td>
</tr>
<tr>
<td>Raigad</td>
<td>70208.10</td>
<td>143578.25</td>
<td>37324.81</td>
<td>251111.16</td>
</tr>
<tr>
<td>Navi Mumbai</td>
<td>66058.97</td>
<td>33147.56</td>
<td>40579.48</td>
<td>139786.00</td>
</tr>
<tr>
<td>Thane</td>
<td>52717.82</td>
<td>65298.49</td>
<td>17379.17</td>
<td>135395.48</td>
</tr>
<tr>
<td>Kalyan</td>
<td>72573.74</td>
<td>178983.94</td>
<td>9692.48</td>
<td>261250.16</td>
</tr>
<tr>
<td>Pune</td>
<td>54994.59</td>
<td>79806.31</td>
<td>41317.75</td>
<td>176118.66</td>
</tr>
<tr>
<td>Kolhapur</td>
<td>22235.06</td>
<td>22672.71</td>
<td>11485.52</td>
<td>56393.29</td>
</tr>
<tr>
<td>Nashik</td>
<td>24755.97</td>
<td>60229.51</td>
<td>16011.72</td>
<td>100997.20</td>
</tr>
<tr>
<td>Aurangabad</td>
<td>44989.80</td>
<td>65739.06</td>
<td>21623.91</td>
<td>132352.77</td>
</tr>
<tr>
<td>Amravati</td>
<td>6791.17</td>
<td>5837.06</td>
<td>423.47</td>
<td>13051.70</td>
</tr>
<tr>
<td>Chandrapur</td>
<td>24437.26</td>
<td>50382.00</td>
<td>10315.04</td>
<td>85134.29</td>
</tr>
<tr>
<td>Nagpur</td>
<td>37200.31</td>
<td>39164.43</td>
<td>11750.21</td>
<td>88114.95</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>514865.53</strong></td>
<td><strong>1054363.37</strong></td>
<td><strong>236155.87</strong></td>
<td><strong>1805384.77</strong></td>
</tr>
</tbody>
</table>
## Hazardous Waste Scenario in Maharashtra AS PER HW Inventory March 2011

### Percentage Distribution
- Landfillable Waste: 28%
- Recyclable Waste: 56%
- Incinerable Waste: 11.13%

### Quantity of Waste

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of Waste</th>
<th>Qty (MT/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Landfillable Waste</td>
<td>514,865.53</td>
</tr>
<tr>
<td>2.</td>
<td>Recyclable Waste</td>
<td>1,054,363.37</td>
</tr>
<tr>
<td>3.</td>
<td>Incinerable Waste</td>
<td>236,155.87</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1,805,384.77</td>
</tr>
</tbody>
</table>

### Number of Industries Generating HW
- Total: 5,428
Tata AutoComp Systems in collaboration with TATA Indicom introduced a Fleet Management System for Fleet managers, Vehicle Owners & Operators to online track the movement of hazardous waste transporting vehicles in real time & manage its utilization.

Fleet Management System (FMS) is a GPS based vehicle tracking system in which a vehicle mounted device is fitted on the vehicle, which transmit its location, date/time, speed to central server at regular interval.

Fleet manager/Vehicle owner can track the real time movement of vehicles on a GIS map, view various reports regarding its movement/trail, stoppage available at http://fms.trako.in application over Internet using secured user id and password.

Apart from tracking fleet manager/vehicle owner can get exception alerts in the event of vehicle over speeding, entry/exit in a particular location/area and stop using trakoAlert service.
Key Benefits

- **Real Time visibility Fleet manager/Vehicle owner can monitor**
  the movement of his vehicle in the real time on a street level map to improve visibility and improve asset utilization

- **Exception Reporting System provides alerts in case of vehicle**
  over speed beyond the set limit, move in or out of a set geography (Geo fence), stops at locations thus providing better control & Safety

- **Fleet Performance Complete historical movement, distance**
  traveled & driving data provides MIS tool to analyze the number of trips, per trip performance, turn around time & exceptions. This results in efficient fleet utilization and logistics planning to Fleet operator

- **Safety & Security Extended visibility of real time location of the vehicle**
  to other stake holders, text messaging (SOS) & two way voice communication provides safety and security of fleet
How it works?

Satellite

In-vehicle **telematics** unit mounted on HW Truck

Location, Speed, Time & **Stop** status information sent using cellular network to trako application server

**Alerts**

Get Response from server

Transporter Sends SMS request to 54545

Current Location status & live Tracking

**Vehicle – Route Assignment by Transport Coordinator**

Vehicle Current Location

**Operator**

**trako Vehicle tracking application server**

**HW transporting Truck Monitoring & Safety application server**
**STATUS OF E-WASTE RECYCLERS / REPROCESSORS IN MAHARASHTRA (HAVING CONSENT OPERATE & REGISTRATION) AS ON 31ST MARCH 2012**

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Name of the Industry</th>
<th>Capacity for procurement of raw material</th>
<th>Registration for recycling / reprocessing of E-waste is issued by MPCB Valid up to</th>
<th>Consent to Operate issued by MPCB Valid upto</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>M/s. Eco Friend Industries, A-205, TTC Industrial Area, Pawane Village, Thane Belapur Road, Navi Mumbai – 400 710.</td>
<td>1000 MT/A</td>
<td>17/04/2012</td>
<td>17/04/2012</td>
</tr>
<tr>
<td>4</td>
<td>M/s. Mercury Metal industries, Plot no. D-48, MIDC Mahad, Tal:Mahad, Dist:- Raigad, Maharashtra.</td>
<td>250 MT/A</td>
<td>17/04/2012</td>
<td>17/04/2013</td>
</tr>
<tr>
<td>5</td>
<td>M/s Sabbir Traders Plot No.999(7), Kirvali Narayan Kutir Udyog Mandal, Village Adivali, Tal: Panvel, Dist. Raigad</td>
<td>240 MT/A</td>
<td>19/05/2012</td>
<td>30/09/2016</td>
</tr>
<tr>
<td>6</td>
<td>M/s Eco Recycling Limited. Eco House, Near Top Glass Enclave, Bhoipada Vasai (East), Dist. Thane</td>
<td>7200 MT/A</td>
<td>19/05/2016</td>
<td>31/08/2014</td>
</tr>
</tbody>
</table>

**Total** | **10,050 MT/A**
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>No. of E-Waste recyclers having obtained Consent to Operate &amp; Registration from MPCB</th>
<th>Total Quantity of procurement of E-Waste Material in MT/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>7</td>
<td>10,050 MT/A</td>
</tr>
</tbody>
</table>
Avoid Pollution. Protect Environment!

Thanks!